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Bernice P. Bishop Museum—Bulletin

753 For example, if a father, living in Atu Oua, had a relative who
[262] had been killed in Hana Iapa, he must eat no food from that valley. Eating food from there would not hurt the man, but his child would become ill and probably die. If a child became ill and the parents thought [755] the sickness might be due to evil influences, the father chewed *noni* leaves and spit out the remains upon the child, about the platform of the house, [824] and on the food that was about to be eaten by the family. This ceremony was supposed to drive away evil spirits.

THE FIRST-BORN

POSITION AND RIGHTS

858 In the family of a tribal chief the first-born child, whether male or
428 female, inherited certain civil rights, property such as lands, cultivations, house, canoes, nets, etc., and personal possessions such as clothing, ornaments, and weapons. If a chief had no children, all his personal possessions were buried with him. This custom applied similarly to first-born children in other families. The first-born male of every family was known as the *tama tapu* (sacred child) or *tama haka-iki* (chief child). This was because the first-born male, being the representative of the family ancestral stock, was chief of his family and therefore sacred. Although inheritance was either through male or female, it is evident that a male heir was regarded as more satisfactory than a female. One informant, in speaking about the position of the first-born said, "They are proud of the oldest, especially if it is a son." In adopting a child the attempt was always made to obtain a first-born boy or girl. Such an adopted child could take the place of the first-born of the family as far as all civil rights and property went; he might be given one or two articles of value as keepsakes but he could not inherit the personal possessions. If the first child of a couple were still-born, the second-born child was called *tama haka-iki* or *mo'i ha'a-te-pe'iu*.

858 The importance of the first-born as representative of the family ancestral stock is illustrated best in the great *ko'ina tupapa'u*, the rite for elevation of ancestral spirits, in which it was the first-born who offered the pigs that were intended for the spirits of dead ancestors. (See Festivals.)

Since the first-born male was the representative of the ancestral stock, it would be logical to suppose that he would upon birth supersede his father as head of the family. In fact such was the custom. Garcia (14, p. 103) speaks of the immediate abdication of the father upon the birth of his first-born son, whose regent he became thereafter. The stories [539] collected on Hiva Oa and elsewhere give clear evidence of this, in the fact that a hero always ceases to play a leading rôle in a legend immediately

764 that relatives of the dead person who attended the body drank the juices which came from its decay. On Nuku Hiva I was told that the treatment of bodies was distinctly a function of old men who no longer had any association with women. According to this informant, women not being *tapu*, never touch the dead. The object in oiling the body was particularly to preserve it; but in the minds of old informants, it was also for the purpose of making clear and brilliant the tattooing on the skin of the corpse. Jardin (15, p. 42) says that the head of a corpse was rubbed with [324] coconut oil, and that it was surrounded with fruits of the *kaupe* (*Carissa grandis*) to prevent the hair from falling out.

During the time of treatment, when the body was not covered with cloth, it was continuously fanned by relatives, doubtless to keep from it the flies, which would have interfered with the mummification. A tortoise-shell fan used for this purpose was obtained by our party. [293] The following quotation from Melville (23, p. 224) describes the fanning of dead bodies in this way on Nuku Hiva:

Two females, of a dejected appearance, watched by its side, plaintively chanting and beating the air with large grass fans whitened with pipe-clay.

Skinning dead bodies is described on Nuku Hiva and Hiva Oa. This process was described to me as consisting in a gradual rubbing or scraping off of the surface skin only, for the sake of showing more clearly the tattooing that lay beneath. It appears, however, that sometimes, at least, the skin itself was actually removed from the body and kept in the house of the family as a sacred relic. How this was done I could not find out.

OFFERINGS PLACED WITH THE BODY

Certain offerings were placed near the dead body to aid it in securing safe passage to the next world. On Nuku Hiva these offerings consisted of a pig's head and a piece of *kava* root (*kahau kava*). In the southern section of the group a dog was hung up on the side of the house in which lay the dead body, and a dead pig was placed under the corpse's knees, these offerings being called *tuao*, gift for the dead. Living poultry and pigs' heads were offered also at this time. As the spirit after its escape from the body was supposed to be subject to attack by evil spirits that sought to devour it, these offerings were made to attract the demons, thus giving the departing soul an opportunity to escape. The hog's head and root of *kava* were also considered to be offerings, with which the *kuhane* or spirit was to gain admittance to the lower regions. Unless the *kuhane* [775] had these offerings to present to the being that guarded the entrance to the underworld, it had no hope of reaching that region.

On other platforms were houses for various purposes: the house of the inspirational priest (*fa'e takau*, *fa'e tu'a*), a house or houses in which his assistants lived during the rites, another for the ceremonial priest, the *fa'e tuka* for the body of the dead chief or priest—if this ceremonial were being performed—, a house for the bodies of human sacrifices, and so on. All of these types of houses, the temporary shrines that were erected at certain times in the sacred place, the images and *tapu* signs, and the paraphernalia, such as drums and conch-shells—all constituting temporary parts of the *me'ae*—will be described in connection with the rites of which they were a part. Long stone slabs or blocks were set up on some platforms or in the ground to serve as back-rests for the priests and old men who took part in the ritual. 764 778

It appears that beneath some of the *me'ae* there were pits or vaults, dug for the burial of ceremonial priests (*taw'a*). Père Jean (19) says that the body of the dead *taw'a* was buried in a very deep pit beneath the *ahu*, and adds that from many of these pits there branched off a subterranean way, at the end of which was another pit or ditch with another subterranean way or vault (*souterrain*) at the end of it.

According to modern informants, pits lined with cut red-stone slabs were made in temple platforms, some being intended to hold a whole skeleton, or skeletons, and others being merely for the deposition of skulls. Other round well-like pits lined with boulders are to be observed in the platforms of *me'ae*, the use of some of which would appear to have been for storing the breadfruit paste (*ma*) eaten by the priests and their attendants, and of others for disposing of sacred objects. Some of the sacrifice pits are known to have been a part of the sacred platforms or to have been near them, and others were separate. At Ta'a Oa on the island of Hiva Oa, at some distance to the eastward of the *me'ae*, there is such a pit into which the human sacrifices were thrown. At Pua Ma'u Mr. Linton examined such a sacrifice pit, which was stone lined. According to Père Siméon, these sacrifice pits were called *tai nui* (*tai*, sea; *nui*, great). A trustworthy informant on Nuku Hiva said that they were called there *pa keho* (*pa*, enclosure; *keho*, stone blocks of basalt). The remains of human bones and animal bones found in the platforms of sacred places, as well as literary evidence from the manuscripts of the Catholic Fathers and information from living natives, show that the remains of sacrifices and sacred objects were sometimes buried under the floor of the sacred platforms, instead of being thrown into pits.

Universally associated with the *me'ae* were sacred trees or sacred groves. Most common of all is the banyan (*aoa*) which was sacred beyond all other trees. Frequently nowadays a great banyan is found growing [324] ●

764 upon the most important platform of a *me'ae* and in many places it is im-
778 possible to tell whether the tree was planted on a platform already built
or whether the platform was built around a tree already growing. The
tangled roots of these great banyans furnished a hiding place for sacred
relics of the dead and for other objects. In some places ironwood trees
(*toa*), which grew naturally on high secluded spots, formed the sacred
groves. Many of the sacred places were located where there were single
great *temanu* trees or groves of them.

Me'ae were *tapu* always, but particularly during the time of perform-
[562] ance of ritual in their precincts. At no time could a woman—other than
an inspirational priestess—set foot within the precincts of a temple. At
the time of ceremonial it appears that, at some times at least, not even
the chief could enter, only those being allowed access who were actually
performing ceremonial, namely, the priests and their assistants. At other
times, it is evident that, in addition to the ceremonial priests, the chief
and warriors entered.

With the completion of a rite in the *me'ae*, all the temporary structures
connected with it, including the shrines and houses (but not the images),
were destroyed. It was only during the times of ceremonies that even the
inspiration priest actually stayed in the precincts. At other times, the
sacred places were deserted—hence their unkempt appearance described
by a number of early visitors.⁹

DESCRIPTIONS OF SEPULCHRAL PLACES BY EARLY VISITORS

Some of the descriptions of sepulchral houses and platforms given in
the accounts of early visitors are of *taha tupapa'u*, others of *me'ae*. It is
not of great importance to distinguish between the two in the descriptions,
since the use of both and the customs in connection with them were in
general the same. Du Petit-Thouars observed houses for the dead, the
posts of which were painted red and yellow (10, p. 347). In the account
of the Duff's voyage (30, pp. 525-526), a sepulchral place of a chief
(doubtless a *fae* in a *me'ae*) is described as follows:

This house stood on a square platform, raised with stones, with a wall six-feet
high, on the lowest side; (all of them being built upon a declivity;) a sort of
escutcheon appears in the inside in memory of Honoo, the chief's father. A drum,
somewhat in the Otaheitean style, but much longer, adorns each end. At a little
distance, on the same platform, another house presents itself, built on a small
eminence, leaving a space in front, where two rude wooden figures of men are
placed, nearly as large as life. Against the side of the house, three other escutcheons

⁹For details of the construction of *me'ae* and other stone structures the reader
is referred to Linton's report on his archaeological survey, which at this date
(December, 1922) has not yet been published.

fighter who had killed a victim was an enemy's skull hanging on the back suspended from the neck (14, p. 88) or attached to the loin cloth or to the ankle. If a man did not own a skull, but was the fortunate possessor of a hand or perhaps merely of a finger of a revenge victim, this was worn on the loin cloth. Stewart (26, p. 213) describes a warrior with a "tremendous head of bushy hair frizzled widely in every direction, cultivated, it is probable, to add to the terror of his looks in battle." 292
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WEAPONS

There seems to have been no restriction of any particular weapon to warriors or chiefs, except perhaps a small throwing club. The war leader carried a full equipment of those described below. In the later period after European discovery, guns, of course, came to be the most prized weapons. One informant, a chief at Pua Ma'u, insists that prior to that time natives had once used the bow (*pana*), afterwards ceasing to make use of it. In historic times, the bow has been used only by boys for shooting fish in pools in the rocks by the sea. The use of the bow in this way in ancient times for fishing is confirmed by all informants. There is no doubt, therefore, that the ancient inhabitants knew the bow and arrow; but it is very doubtful whether it was ever used as a weapon in war. 411

The most important weapon that a warrior carried was his club (*u'u* or *akau toa*). These clubs were of the two types shown in the accompanying sketches (figs. 12, *a* and *b*). Another club, less used, was shaped like an oar blade. There were several types of spears used, all of them made of casuarina. One of these was called the *mati kena* and had a simple shaft with a series of superposed points on the end cut out in such a way that those which pierced the body would break off and stay in it. A second type of casuarina spear, called *kepu*, consisted of a long shaft with a tapering point, the butt end of which was flattened like a narrow oar. (See fig. 12, *c*.) Porter (24, pp. 86-87) gives the following description of the spears that he observed: [226]

They have two descriptions of spears which they use in their warfare. Those by which they set the most store, are about fourteen feet in length, made of a hard and black wood, called *toa*, which receives a polish equal to ivory . . . The other kind are smaller, of a light kind of wood, and are thrown (?) with much accuracy to a great distance. At certain distances from their points they are pierced with holes all round, in order that they may break off, with their own weight, on entering a body, and thus be more difficult to extract.

Dordillon (8) gives the following terms for weapons: *taakeho*, lance, bayonet; *taaeiki*, lance of pandanus wood; *patoatoa*, lance of young iron-wood; *parahua*, tomahawk in form of an oar; *paeo* or *pakeo*, *mataku*, lance

was building it would die. Consequently the house-building *tuhuna* had to be certain in his mind that it would not rain and that the omens were good before he would begin. The dimensions of house platforms were set and regulated by spans (*ma'o*). The outline of the platform was first indicated by a single line of stones laid out on the ground, the line being called the rat's path (*te a'anui kio'e*). The platform was then built up line by line, the interior being filled with earth as each level of stones was laid. 342 333

I did not ascertain whether or not the same workers (other than the *tuhuna*, who directed the work throughout) continued with the erection of the house itself after the completion of the platform. While the house was in building the *tuhuna* and workers and those who gathered the materials were fed by the owner. Little was ascertained regarding the actual process of construction. It is obvious that the frame would have been erected first. Inside the frame under the roof were the *hakahaka*, wooden cross-pieces on which workers sat or stood while binding on the thatch. A special *tuhuna* was employed to put on the ornamental sennit lashings, the designs of which were derived from string figures. According to Linton, these sennit designs sometimes showed against a back ground of white cloth that was wrapped around the ridge-pole beneath the bindings. The man who adzed and carved the front and end posts of the house was also a special *tuhuna ha'a tikitiki*. According to Linton, old posts were utilized for the frames of new houses. Old sennit cord was also used for lashing and for binding on the thatch. 342 [531]

When the house itself was completed the *pu'e* was again intoned. The ritualistic significance of the chanting of the *pu'e* upon the completion of the platform and the new house is easily seen. The *pu'e* begins with an account of the origin of the land. It ends by summoning various children of Atea, personifications of the different materials utilized in building platforms and houses, each being called upon to come and contribute his or her share to the erection of the house of Atanua, wife of Atea, and traditional ancestress of all Marquesans. Soil (*epo*), personified, is summoned to come and fill and level the platform of the mythical house of the goddess Atanua; next, cut red stone (*ke'etu*) personified, is summoned to come and make the curbing along the front edge of the house elevation (*hiu*) on the platform; then round beach stones (*kiva*) to come and cover the top (*ae'ae*) of the *paepae*; breadfruit wood (*mei*) to come for end posts (*pou*); a palm, *vahane* (*Corypha umbraculifera*) for the ridge pole (*ka'ava*); coconut (*ehi*) to furnish fiber for sennit lashings (*pu'u kaha*), and leaves for the top thatching (*uhi*), and for the mats bound over the ridge crest (*topatu*); fau for the rafters (*okaoka*); and bamboo (*kohe*) to furnish the supports (*hokahoka*) and *kohakoha* of the roof, and bamboo uprights (*pae*) closing the front of the house. 342 824

a rail around it. The supplies for a voyage were kept here and in the body of the canoe, and the people on board lived on the platform and below decks. According to a trustworthy Fatu Hiva informant, such a canoe would have two sails, the masts being stepped in the usual place in the forward end of each hull. War canoes and canoes for exploration—according to modern natives—were as much as sixty feet long. So far as I know, however, there is no record of a canoe of this size, although no limitation in the materials at the disposal of the native nor in his ability to utilize them would have prevented him from making canoes of this size or even larger. 501

Porter (24, p. 102) describes small temporary craft as follows:

"They have also smaller canoes, which are commonly nothing more than the hollow keels of the large ones, after the upper works are taken off; these are furnished with outriggers, and are used for fishing about the harbour.

MATERIALS FOR CANOES

Materials used most for canoe-making were *temanu*, *hutu* (*Barringtonia speciosa*), and *mi'o*. The size of the canoe desired frequently determined the choice of a tree. The *temanu* was the largest of the available trees, and furnished the most durable wood. According to Linton breadfruit trees were used for smaller canoes. 324 ● 396

PARTS OF A CANOE^{6a}

The main parts of a canoe consisted of the hull, adzed out of a tree trunk; detachable bow and stern piece; sideboards lashed on the edges of the gunwale; and an outrigger. 501

The main body or hull (*vaka*, *tua*, *tekee*) of the canoe was made of a hollowed single tree trunk. The bow (*piha*, *au'au*, *kanihi*, *hopeta*), a separate piece, was usually upturned, but both Cook (6, p. 711) and Stewart (26, p. 219) describe horizontal bows. Linton aptly describes the stern (*mu'i*, *hope au'au*) as narrowing "rapidly to form the tail, which was a long projection like a thick plank with the edge up, rising from the body of the stern piece at an angle of twenty to thirty degrees." (20.) The sideboards (*hue tana*) consisted of single hewn boards (*papa*) lashed (*humu*) to the gunwale of the canoe, but it is probable that the sideboards of some canoes were built up with several boards, for Porter (24, p. 79) described the sides as made of many pieces of the breadfruit tree, cut into the form of planks, and sewed together with the fibers of the outside shell of coconut. The seams are covered inside and out with strips of

^{6a} The terminology is from Dordillon's ms. and from Linton's and my own notes.

They are about fifty feet in length, two in width, and of a proportionate depth; 422. they are formed of many pieces, and each piece, and indeed each paddle, has its separate proprietor. To one belongs the piece projecting from the stern, to another the part forming the bow. The pieces forming the sides belong to different persons, and when a canoe is taken to pieces, the whole is scattered throughout the valley, and divided, perhaps, among twenty families. Each has the right of disposing of the part belonging to him, and when she is to be set up, everyone brings his piece, with materials for securing it. The setting up a war canoe goes on with the same order and regularity as all their other operations.

It is evident that the parts of such canoes would be distributed in the houses of the various owners.

HOUSING

At Pua Ma'u I was told that war canoes were always taken to pieces 504 when they were not in use. Here and at Atu Ona canoes were kept in special houses on the shore. At Atu Ona, the natives relate that a certain traditional canoe used to repose on two stone supports (*ano*) on the main dance place of the valley. One of these supports, a large block of basalt with a somewhat crescent-shaped concave top, is still on this dance area.

While on Ua Pou I learned that on that island the chief's war canoe was sometimes, if not always, carried on to the feast place before his house. It seems probable that it was the fishing canoes which were housed by the sea, and that the war canoes, which were more occasionally used, were those that were taken apart or that were kept in houses on the chief's dance area. Porter describes (24, p. 108) a place, which he calls the "public square," which he invaded far up Tai-pi Valley, and says:

Numbers of their gods were here destroyed, [and] several large and elegant new war canoes, which had never been used, were burnt in the houses that sheltered them.

MINOR INDUSTRIES

TAPA-MAKING

The finest bark cloth (*tapa*), called also *ute*, pure white in color, was 287 made from the bark of the *ute*, or paper mulberry (*Broussonetia papyrifera*). 324 • *Ute* furnished all the white cloth used ceremonially. The planting and cultivation of this tree is described in connection with Planting. A rougher, white cloth (*kahu mei*)—the most commonly used—was made of the bark of young breadfruit trees (*mei*, *Artocarpus incisa*). The sacred cloth called *hiapo*, reddish brown in color—a natural color, not dyed—was made from the bark of the branches or roots of the *hiapo*, the name given the young banyan (*aaa*). Dordillon (8) gives *akatea* and *atea* as names of trees or bushes whose bark was used for *tapa*, while Jardin (15, p. 42)

287 says that *katea* (*Alyxia*) was used. According to this writer (15, p. 34), the bark of *mi'o* was also sometimes used. The implements employed in making *tapa* consisted of a stone (*ke'a, kiva*), a wooden anvil (*tutua*) and

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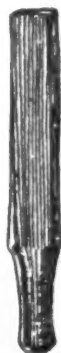


FIGURE 17.—Tapa beaters (*ike*).

the wooden beater (*ike*) (fig. 17). Cloth-making was a woman's industry.

The following simple and concise descriptions of making *tapa* in ancient times are translated and briefed from a manuscript written in the native dialect by Dordillon (9)—evidently copied from descriptions by a native:

[36] The breadfruit tree was climbed and a branch cut off with a sharp stone. The bark was pulled from the branch with the teeth and beaten for a long time on a stone with the wooden beater. The fiber was then worked in fresh water with the hands, after which it was bundled up and carried into the house where it was left four days. Being then brought out, it was beaten again on a smooth beach boulder, then on a wooden anvil, after which it was put in the sun to dry. If the cloth were dyed (yellow *cua* furnished the only dye), it was soaked in the dye before drying. In the making of the *ute* cloth the stem of the paper mulberry plant is described as being cut down, peeled, and the bark put first in water and then beaten to remove the inside bark. The fiber was then left in the house for some time, after which it was beaten and felted together, rinsed, and the cloth dried by being stretched out in the sun with stones laid on the border to hold it.

Melville (23, pp. 172-173) describes cloth-making in Nuku Hiva as he witnessed it:

In the manufacture of the beautiful *tapa* generally worn on the Marquesan Islands, the preliminary operation consists in gathering a certain quantity of the young branches of the cloth-tree. The exterior green bark being pulled off as worthless, there remains a slender fibrous substance, which is carefully stripped from the stick, to which it closely adheres. When a sufficient quantity of it has been collected, the various strips are enveloped in a covering of large leaves, which the natives use precisely as we do wrapping-paper, and which are secured by a few turns of a

INSPIRATION OF A TAU'A

The inspiration of such a priest by his god took the form of violent possession. So far as I have been able to find out, no artificial means were employed in inducing the physical state. Although, like the other old men, the inspirational priest consumed much *kava*, it does not seem to have been the object of inducing possession. When the priest was in such a state of possession, it was thought that the spirit which was animating him and speaking through his mouth was that of the god. According to Garcia (14, p. 46) when an inspirational priest desired to be possessed he would usually sleep at night in a sacred place, laying his head on the trunk of a coconut tree near the place consecrated to the god. Suddenly he would cry out that he heard the god coming and then he would make a noise, sometimes loud, sometimes soft, but always peculiar, seemingly a trick of ventriloquism, with which practice these priests were acquainted. Stewart says (26, p. 246) that

... in their fits of inspiration they become convulsed, glare fiercely with their eyes, and put their hands into a violent quiver, running about prophesying death to their enemies, in a squeaking voice, and at times demanding human victims for the god by whom they were possessed.

In the manuscript of Père Pierre (4) the possession and activity of *tau'a* at such times are described as follows:

When a god entered into the body of a *tau'a* (*etua hooka*) and took possession of him, the *tau'a* became depressed and his body became convulsed. If the god did not leave him soon, he took in his hand a stick of iron-wood (*hoto*) and set about traveling around the country like a man transported by the god or demon. The domestics of the priests (*moa*) and the *tauoha* (dancers) accompanied him in his evolutions. The *tauoha* danced in a grotesque manner about him. Arrived at a valley, he went to rest upon the sacred place (*me'ae*) and passed the night there to incorporate in himself the god of this place. He behaved thus in all the valleys through which they passed. During all the time of his evolutions or possession, he took nothing at all for nourishment but the water of coconut. It was not permitted to maltreat him, nor any of his followers, because of the god who resided in him; but the *moa* and the *tauoha* must watch that no one gave him the water of coconut with *eka* (amomum) in it, lest the god abandon him. Should he drink this potion he would have ceased to be a *tau'a* and his virtue would have passed to him who had given him this drink.

During his evolutions, all work was suspended. It was not even permitted to light a fire. Everybody must stay at home and shave his head. It was forbidden to carry *eka*, to rub oneself with it, or to anoint one's self with oil, under pain of being put to death by the god. The *tau'a* tried to kill with his staff (*hoto*) any whom he saw smearing themselves with the yellow *eka*. Arrived at the valley next his own, he would throw his staff into the sea and this stick would arrive before him upon the beach of his own district. [In the story of Fatu-a-nono, a *tau'a* is saved from drowning by her staff, which bears her to shore from a swamped canoe.]

Having returned to his district, he went to the sacred place. The *moa* and the *tauoha* built him a house with green coconut leaves. In a moment of convulsions he cried: "*Ena tu u taika i N—*" (There are my sacrifices at N—), stating the num-

At each corner of the low wall a number of long, slender bamboos were erected, tied together at short intervals in a square form of bands of white cloth, while within, surrounding a bier covered with white, were a number of cones six or eight feet high in the form of the braided leaf of the coconut, confined at the top by bands of white cloth, the ends of which hung down in long pennants. 778

In Wilson's account (30, p. 526), "a sort of escutcheon" is described within a sepulchral house of a chief. "Again the side of another house, three other escutcheons are placed."

CEREMONIAL APPURTENANCES

Koufau were peeled *fau* stakes wrapped in white cloth and ornamented with plaited coconut leaves. These served as signs of *tapu*, marking off restricted areas during the times of the performance of ceremonial. What are evidently *koufau* are described by Garcia (14, p. 59). He speaks of an altar surrounded by long bundles of white stakes from which floated bits of vari-colored cloth. Melville describes similar signs of *tapu* around the restricted area on a feast place at the time of a festival (23, p. 198). *Koufau* are mentioned by Krusenstern in the following description (16, p. 127):

In the outer circle were some statues carved in wood, intended to represent the human figure, and evidently the coarse work of some unskilful artist; near to these statues were some pillars wrapt up in cocoa-leaves and a white cotton stuff. We were curious to learn what was the intention of them; but could obtain no answers to our inquiries, than that they were *tahbu*.—Near the *morai* was the priest's house, whom, however, we did not find there. Every family has its separate *morai*: the one we visited belonged to the priests.

Kopiripiri or *opinipini* (cf. *opini* on the *fa'e tukau*) was the term applied to the coconut leaves that embellished the *fau* stakes used as *tapu* symbols and the posts of sacred structures bedecked on the occasion of rites. Dordillon (8) gives as the meaning of the word *opini*, a sign of peace. The use of the coconut leaf as a symbol of peace is described under War. The coconut leaf appears to have been a symbol of sacredness that was used in a number of ways on ceremonial occasions: to decorate the sacred houses, *tapu* markers, and war canoes; as a headdress and body covering for *tuhuna* and others when occupied with ceremonial; and as a peace sign. The fact that a coconut leaf was used as the ceremonial dress of *tuhuna* justifies the conclusion that its use in decoration was probably primarily ceremonial rather than aesthetic. [824] •

It is common today to find about the remains of some sacred places a great number of conch shells. It is probable that these were used along with drums in ceremonial, as was common in other groups, in announcing periods of *tapu*. Whether drums were used in the sacred precincts not

776 dangerous, unless the spirit were neglected. Such possession manifested itself in a trance state.

As I have said above, I believe that modern informants confuse the ancient belief in *fanaua* with the possession of individuals by familiar spirits (*etua*) for purposes of divination and oracular utterance. When a familiar chose a woman as its servant and thus itself became that woman's servant, she had to feed it with offerings, else it would kill her and seek another controller. A woman who was possessed by and possessed a familiar in this way could send it on commissions, to inflict death upon other women. When a woman had sent her familiar out on a commission, she could only recall it with very large gifts. Women thought to possess familiars often took advantage of the popular belief in order to extort gifts from others.

VEHINE HAE

Vehine hae (wild women) is a term applied to fearful spirits in general. It was applied to phantoms of more or less indescribable nature and unknown origin. Other terms for such phantoms are *kaee* (8) and *etua peke cu mei* (god-angry-leaf-of-breadfruit). *Vehine hae* is most commonly applied to human specters or wandering ghosts. Again, in legends, the word is used for ogresses. As the name would imply, *vehine hae* are female evil spirits. A few instances have come to my notice, however, in which the word is applied to male spirits, but this is probably not a correct use of the term. *Vehine hae* manifested themselves in various ways.

[824] Whistling of unknown origin was attributed to them and the squeaking sound made by the branches of *fau* trees moving slightly in the breeze or any other eerie sounds were thought to be their voices. Cries heard in the mountains after nightfall, and evil odors that assailed walkers at night were thought to come from these spirits. They were conceived of as being able to assume different forms: one was sometimes seen in the form of a cat, a dog, or a cow. At Taiohae it is believed that there is a *vehine hae* in the form of a woman, dressed always in white with long black hair, who is to be seen walking along a certain section of the waterfront at night. On account of the belief that these spirits were abroad at night, there is now, and probably has always been, very little promenading in the Marquesas at night except by bright moonlight. Today it is fear of *vehine hae* that makes natives close up their houses as tightly as possible when they sleep.

[513] According to Père Jean (19) spirits from Havai'i were supposed to come frequently upon the earth and were seen as *vehine hae*, appearing only at night. *Vehine hae*, seen always with the head and eyes turned

by his slow walk—his body being dead, he naturally could not make good progress. 754

Personal revenge was also accomplished by means of an offering to a god, accompanied by the request that the personal enemy be killed. The rite was called *utuna* (*unuka*). A pig, fish, or *kava* was carried to the sacred place and offered with the formula, "O—, here is your offering, bring about the death of—." For the same purpose, before eating, a little *popoi* was thrown into the air, with the same invocation (4).

Another manner of accomplishing *hau* was as follows. Female relatives would come to the place where the dead man's body was, and weep. No one could touch them. Anyone who accepted anything from their hands would be taken as a human victim (4).

From Père Pierre's manuscript (4) comes this account of the way in which a man could revenge himself upon a thief. When a man's pigs had been stolen, he had recourse to a *tau'a umoko* who cast the spell called *umoko* in the following way: The *tau'a* took branches of the vine called *papa*, made a circle with the twigs, and then walked around it six times, saying a spell— 754 685

Around, around, O Oieke,
I am turning, O Oieke,
Take your man, O Oieke,
The man born of the land, O Oieke,
Taimenanu is the man, O Oieke.

The practitioner extended his arms as though taking in his hands the spirit of the thief and recited another spell. He then went upon the temple platform, pretending meanwhile to carry the spirit in his hands. Arrived at the sacred place, he put the twigs of *papa* (*Phaseolus amoenus*) in a hole with some other plants that cause itching, as for instance wild taro or down of bamboo, and covered all with earth. During seven days sexual intercourse was *tapu* to the priest and he must fast an equal number of days. According to Père Pierre, he would in reality fast three days, the fact of the other four being accomplished in a single day by lying down and getting up four times. On the seventh day—according to an informant, the thief fell sick and died slowly. [824]

A thief could protect himself against the *umoko* by washing his body with the grease of the pig that he had stolen. If the thief had done this, those who solicited the *umoko* would die.

Another manner of accomplishing the death of a thief was by means of the rite called *niu vahi*. The *tuhuna niu vahi* made a *koufau* by taking a stick of *fau*, scraping off its bark, and ornamenting it with little strips of white cloth. With this he went at night upon the house platform of the

302 combs were not used in ancient times. Dordillon (8) gives the following terms which supplement our information regarding modes of arranging the hair: *Ouoho tustue*, *ouoho tukervo*, and *ouoho tuke* meant hair fixed stiffly; *piama*, a head shaved in the form of a tonsure; *piveve*, to cut the hair in the form of a circle in front; *toua'e i te pa'e*, to let the hair down in front; *ponane*, hair simply tucked up without fastening; *koti'oti'o i te ouoho*, to cut the hair like a ladder [?]; *pa'e oioi*, a coiffure saturated with scented oil; *pohatae*, beard, or side whiskers; and *topetu*, a tuft of hair on a shaved head. The following should also be added: *ohovii*, curl of hair; *ouoho kaaputu*, curled hair (= *koputu ouoho*, *ouoho taputuputu*, *ouoho takaha*); and *poriri*, curl of hair on top the head (= *tapuaki*). Bleaching or dyeing of the hair was, so far as I have been able to ascertain, never practiced in the Marquesas.

ANointing, STAINING, AND PAINTING OF THE BODY

302 Bleaching of the skin was the universal practice of women and *ka'ioi*
824 youths before festivals. This was accomplished in part by seclusion and avoidance of the sun but also by anointing the body with juices extracted from the leaves of the *koknu* tree (?) or of the *papa* vine (*Phaseolus amoenus*). After such application during seven or eight days of seclusion the skin would be bleached white. The normal color returned immediately upon exposure to the sun. Women protected themselves from the sun with robes and leaf shades. According to Jardin (15, p. 41), *niou* (*Siegesbeckia orientalis*) leaves were pounded and used by women for skin bleaching. The root of *ena* (*Curcuma longa*, or *amomum*) some of it raw and some baked, was grated and mixed with coconut oil to make the body ointment or stain called *ena* or *eka*. The raw *ena*, covering the whole body, was the distinguishing mark of the youthful libertines called *ka'ioi* and of women at festivals. It was frequently smeared only on the face. The stain made from the baked root (*ena moa*) was forbidden to women everywhere and to all commoners on Ua Pou.

Pani was perfumed coconut oil, used for anointing the head and body, rubbing dead bodies, and for polishing wood and stone carvings. The oil was extracted from the coconut meat in two ways: by one method the milk was squeezed from coconut gratings, put in a vessel, and the oil separated out by putting hot stones in the bowl; or gratings of coconut meat were put in large vessels and exposed to the sun, which caused the oil to run out from the meat. Sweet-smelling flowers cut in small pieces and powdered sandal wood were added to the oil until they had soaked it all up. This mixture was then exposed to the sun for three or four

days until the perfumed oil ran out from the flowers and powder. To this perfumed oil fresh coconut oil was added. The *pani* was then put away in small closed coconut containers or in bamboo joints closed at the end with a *fan* leaf tied tightly in place. Sandal wood (*puahi*, *Santalum freycinetianum*) was grated and mixed with coconut oil to make another kind of ointment called *poa panu*, which was used both on the body and head. *Huhe*, an ointment used to make brilliant the bodies of the living at festivals and of the dead on their biers, consisted of coconut oil, to which had been added a little *ena*, fruit of the *pu'a kokuu* (?), and sweet-scented flowers—in other words, it was common *pani* to which was added *ena* and *pu'u kokuu*. 302
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A man and a woman each had to prepare his and her own coconut oil. It was believed that a man who used a woman's head oil would become blind (9). Sexual intercourse was *tapu* while oil was being made (18, [834] p. 138).

Painting the body with white earth was a practice of old people at memorial festivals, the object being to exaggerate their decrepitude (4). On Hiva Oa I was told that younger men would sometimes do this at festivals to make themselves look like old men (*ha'a ko'oua*).

OTHER ADORNMENTS

Women dancers wore, tied to their fingers with coconut fiber, long white tail feathers of the tropic bird, the feathers projecting up from the backs of the fingers. Sometimes the white beard ornaments called *pavahina* were worn on the hands in this way, instead of the feathers. This mode of ornamentation was called *kiki*. Langsdorff (18, p. 158) states that six rings, ornamented with tail feathers of the tropic bird, "are put on each middle finger of the dancers." The feathers used for these ornaments were procured by catching birds on high rocks at night. The birds were never killed but, after the tail feathers had been pulled out, were allowed to go. 213

The fans (*tahi'i*) with elaborately carved handles (fig. 26, a) appear to have been used by both sexes, and to have been reserved as part of the dress or insignia of chiefs, chiefesses, and priests on ceremonial occasions. These were made by especial *tuhuna*. The woven part was sometimes plastered with white clay. The carved handles were made of ironwood or human bone polished with coconut oil. These elaborate fan handles were family heirlooms. Fans were made both of coconut leaf and pandanus.

The *koke pu'a*, according to Dordillon, was an ornament consisting of long cock's plumes attached to the end of a stick. The *koke tata* is described as an aigrette of cock's plumes on the end of a piece of bamboo.

These sticks varied in size; the larger sticks had on the underside a small hollowed place that was held over the hollow of the palm. As they sang the *komumu* at feasts or at home in the evening, the singers, seated in a circle, accompanied the chant by tapping on these resonant bits of wood each with a stick held in the right hand; and a bass was furnished by several small resonant logs that were tapped in the same manner, but in slower tempo. It appears that men and women of all ages sang this song. Tradition has it that the first *komumu* was taught to a Hivaoa man by two ogresses who lured him into the uplands and made him captive; afterwards, when the hero of the legend escaped and returned to the habitations of men, he brought back with him a new kind of song which has been a favorite ever since. 533^x
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Although the following remarks by Melville are scarcely to be called an appreciative picture, evidently they are descriptive of the singing of the *komumu*, and they may serve to give some idea of the effect of these singings. What Melville speaks of as "half-rotten sticks" were undoubtedly dried pieces of *fau* wood which though solid is very light and porous, and on account of its resonance, is used in the *komumu* and for making xylophones. Melville² wrote: p247

Every night, before retiring, the inmates of the house gathered together on the mats, and squatting upon their haunches, after the universal practice of these islanders, would commence a low, dismal, and monotonous chant, accompanying the voice with the instrumental melody produced by two small half-rotten sticks tapped slowly together, a pair of which were held in the hands of each person present. Thus would they employ themselves for an hour or two, sometimes longer.

The eulogistic chants were not merely songs composed and sung in honor of someone as a complimentary expression or as a feature in some entertainment, as one unacquainted with the Marquesan mind and manners would probably suppose. Although some eulogistic chants were purely for pleasure and amusement, others were serious in their purpose, forming, so to speak, the nuclei about which feasts and festivals of large social and religious significance were enacted. Socially, chants such as the *putu*, when performed with accompanying formalities, had a lasting effect upon the prestige of the honored youth, and for his whole family connection as well, in enhancing his and their prestige, and celebrating an event that would be remembered as long as the song itself was sung, which might be for generations. Often the occasion of the composition of such a laudatory chant as the *putu* would come about when a tribal headman would call upon the tribesmen to build a new feast and dance place with great stone platforms and paved court in honor of his first-born son. 533^x
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² Melville, Herman, *Typee—a peep at Polynesian life during a four-months residence in a valley of the Marquesas*, p. 257, New York, 1874.

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HOUSES

THE MARQUESAN DWELLING AND ITS ADJUNCTS

The establishment of a Marquesan commoner consisted of only two houses, the dwelling and a cook house—an open shed with a frame of the dwelling type. Both buildings stood in a small yard which was often enclosed by a rough stone wall about three feet high. Rich commoners had another house, the store house (*fata'a*), which was usually built near the end of the dwelling. A chief's establishment was much more elaborate, consisting of a dwelling, a cook house, a store house and a men's house or warriors' house which served as an eating place for the chief and as a general club room and assembly place for his male friends. Both the store house and warriors' house were tapu to women. The chief's establishment was always built near the tribal assembly place (*tohua*) and the public sacred place (*me'ae*). Both of these structures were considered the property of the chief.

Very few buildings of aboriginal type are in use in the Marquesas at the present time and no large structures of ancient form have been erected in recent years. The Marquesans appear to have had only two types of houses although there were several minor variations of one of these types. One type, which will be referred to as the small house type, was used for all sorts of small and temporary structures built with a minimum of labor. The other, which will be referred to as the dwelling type, was used for residences and for all other large and permanent buildings. Most houses were built on the ground or on stone platforms (*pacpae*) but a few structures, notably the store house and the houses in which young people received religious instruction, were raised on posts.

THE SMALL HOUSE TYPE

Small temporary houses were erected for the accommodation of women during childbirth, as dwellings for solitary old people, as places for the tattooing of women and commoners and as camping places in uninhabited valleys. As a rule such houses were built on the ground without a stone platform and were of simpler construction than the dwellings. The framework consisted of two end posts supporting a ridge pole against which two rows of light poles were leaned from either side, forming the rafters. The main timbers were not dressed but the rafters, commonly of *fau* wood, were stripped of their bark. This bark was twisted into strings and later used to tie on the thatch. The timbers of the framework were lashed together with bark string. The thatch was usually made of coconut mats arranged longitudinally, the lower edge of each mat overlapping the top of the one below. These mats were fastened to the rafters by strips of

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in which they occur are unquestionably those of ordinary dwellings. No pits were observed in the dwelling *pacpac* of Hiva Oa and the natives had no knowledge of such a feature. The single example seen on Fatu Hiva was in the valley of Omo'a in a *pacpac* built for a chief's house; it was explained as a place for the temporary storage of food. The occurrence and use of these pits is of interest in connection with the skull pits found in many *me'ae* throughout the group. 342

All the Marquesan valleys afford an abundance of loose stone, a condition which, coupled with the constant necessity of building platforms and terraces, led to a development of the art of dry stone masonry truly remarkable in a people otherwise as primitive as the Marquesans. It would be difficult for Europeans to improve on the workmanship shown in many of the ordinary *pacpac*. The builders seem to have taken pride in using the largest material available, bowlders weighing half a ton being quite common in these purely utilitarian structures. 333

POSITION OF THE HOUSE

As a rule there was only one house on a *pacpac*, but a few *pacpac* were observed on which there appeared to have been two, and possibly even three houses arranged longitudinally on the raised rear portion. None of the sites of this sort looked to be very old, and it seems probable that this was a recent development. Such a house group consisted of one large structure, the dwelling, with a small detached building at one or either end. The earth of the unpaved floors of the small buildings contained much ash and charcoal, proving them to have been cook houses. Normally a single house covered the entire rear raised section of the *pacpac*, the floor of which was divided longitudinally into two almost equal sections. The front section, which formed the house floor, was paved with flat water-worn bowlders, usually small and of uniform size. The rear section, which formed the foundation for the bed, was unpaved, and its surface stood six to eight inches below the level of the floor. 342

FRAMEWORK OF THE HOUSE

The main timbers of the house were commonly made from breadfruit wood, but *mio* (*Thespesia populnea*) was also employed, especially when the posts were carved into tiki form. The timbers were carefully hewn and dressed and sometimes were elaborately carved. The essential elements of the framework were the end posts and the ridgepole, the front posts and the stringer. The great length of some of the ancient houses, upward of a hundred feet, necessitated the use of additional posts in regard to which Gracia says (28, p. 123), "If it is thought on account of the length [of the house] that the first two posts are not sufficient they plant a third just in the middle of the hut, or even a row." None of these very large structures have survived, and it is impossible to give additional details. 342
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tudinal poles, usually single bamboos, which ran the full length of the inside of the roof. The two outermost poles were placed eight inches to a foot above the stringer and below the ridgepole; the third pole was placed midway between them. They were attached to all the rafters by lashings of sennit or bark string. Both the front and rear roofs projected six inches to a foot beyond the end walls. 342

One house in Hiva Oa (Pl. xl. C) had a narrow porch supported by an additional row of posts, topped by a stringer. These posts were planted in the *porpae* about two feet in front of the house wall. The rafters of this porch were inclined at a lower angle than those of the roof. This feature was not observed elsewhere and was probably due to European influence.

The rear roof extended from the ridgepole to the ground. It was usually supported by eight main rafters, but these were not hewn so far as observed. They were simply peeled hibiscus poles of slightly larger diameter than those used for the remainder of the roof. In some houses all the rafters of the rear roof were identical in size and material. Between the main rafters were smaller poles placed two or three inches apart; at the peak they crossed the similar poles of the front roof forming a crotch. These smaller poles were secured in position on the rear roof by three cross poles of bamboo, the highest being opposite the top crosspiece of the front roof, the lowest about eighteen inches above the floor, and the third midway between them. All the rafters were lashed to these cross poles.

All the early descriptions of Marquesan houses mention the rear roof as perpendicular or descending at a very steep angle, and the old pictures show this feature, also a front roof inclined at less than forty-five degrees. Actual measurements prove that the old authors have exaggerated both these features. The pitch of the rear roofs ranges from eighty degrees in some of the houses of Nuku Hiva to as low as sixty-five degrees in an old dwelling on Hiva Oa. The pitch of the front roof seems to have been rarely, if ever, less than fifty degrees, with about sixty-five degrees as normal. In one old house in the valley of Hana Hehe, Hiva Oa, the pitch of the front and rear roofs is about sixty-five degrees for each.

The roofs of all Marquesan houses were thatched, and a variety of material was employed. In recent buildings coconut mats appear to be the most common, but two or even three sorts of thatch were not infrequently used on the same structure. The thatching mats, which were eight to twelve feet long and one foot to eighteen inches wide, were made by splitting a coconut frond down the midrib and interweaving the leaflets of either half to form a long narrow mat of checker-work pattern. Mats of this sort are still in common use in most parts of Polynesia. The mats were placed on the roof either singly or in pairs, with the midrib edge up and were tied to every third or fourth rafter with loops or sennit or sewed on with bark string. A large wooden needle was used for sewing. The [4/2] 824

342 thatch was lashed to each rafter with a single cord running the height of the roof. The bottom tier of mats was laid on first, and the successive tiers were laid on shingle fashion, with a deep overlap. As the successive layers were rarely more than two or three inches to the weather, a well-made roof would be from four to eight mats thick.

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An almost equally common form of thatch was made from leaves of the breadfruit tree. Long straight upland reeds, or occasionally hard-wood shoots, were gathered and the leaves were strung on these by holes pierced at the juncture of the stem and leaf, the top of one leaf resting against the bottom of the next. These rods were then attached to the rafters in overlapping rows in the same manner as the mats. When in position the leaves stood edgewise on the roof. Thatch of this sort, although shaggy and rather unpleasing in appearance, is very effective and is said to outlast that of coconut mats. Where bread fruit leaves were used for thatching, coconut mats were usually substituted for the first two or three rows.

In ancient times a third form of thatch, made from palmetto leaves was used. The leaves were strung on light rods at intervals of twelve to eighteen inches, the rod passing from side to side through the juncture of the leaf and stem. The rods were tied to the rafters so that the leaves lay flat and overlapped like shingles. According to informants palmetto was commonly used to thatch the houses in *me'ac*, but was not tapu for other structures. The only example seen was on the front roof of an old chief's house in Ua Pou.

The use of pandanus for thatch is mentioned by Jardip (33, p. 51), who says that this material lasted longer than either coconut mats or breadfruit leaves, but the practice is now obsolete and only one fragment of doubtful authenticity was seen. This fragment, found in the debris of a house of Tahitian form, consisted of a hardwood rod over which the leaves had been doubled, with the two ends pinned together by a splinter a short distance below the rod. A somewhat similar technique is followed in the making of sugar cane thatch in Tonga.

Grass was very rarely used for thatch but the chief of Tetai, one of the small side valleys in Atu Ona, Hiva Oa, is remembered as having occupied a grass-thatched house, the frame of which was of ordinary Marquesan form.

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The method of closing the peak of the thatched roof was very simple and effective and is still employed for all thatched roofs. In the crotch formed by the crossing of the small rafters above the ridgepole, a small pole was laid with its top flush with the rafter ends. Several layers of coconut mats were then laid longitudinally over this and bent down on either side so that their lower edges extended some distance below the top of the last tier of thatching. These mats were then secured in place by long wooden splints passed through them from side to

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The material employed for lashings was a flat three-strand sennit plaited from coconut fiber. This fiber was obtained from both the husk and the leaf sheath. The sheath fiber was considered the better, probably because its greater length rendered possible a smoother plait. The only colors seen were a dull black and the natural red brown, but Stewart (59, p. 236) mentions the use of yellow and white sennit as well. The plaiting and dyeing of this sennit have been described on pages 378 and 379. 291 342 531 284 (624)

The only complete set of ornamental lashings seen in the Marquesas was in an old house in the valley of Atu Ona, Hiva Oa. The lashings were applied to the juncture of the three main rafters of the front roof with the ridge pole, to the junctures of all the rafters of the front and rear roofs with the lowest crosspieces, and to the junctures of the main rafters of the rear roof with a squared beam which ran along its under surface at the height of the top of the front wall. This top beam probably did not exist in really primitive structures. According to informants, ornamental lashings were used for the attachment of the front posts to the stringer, of the main rafters of the front roof to the stringer, and of all the cross poles of the roof to the rafters. Stewart (59, p. 236) says that the front posts were "generally neatly hewn and ornamented by braids of sennit . . . tied on in horizontal stripes in diamonds or in checks, in a pretty and fanciful manner." As the front posts in Hiva Oa, Tahu Ata and Fatu Hiva were usually carved this was probably a Nuku Hivan practice. The posts of houses in Nuku Hiva are also said to have sometimes been covered with white tapa under the lashings.

A considerable number of lashing designs were employed but their use has been discontinued for many years and only two patterns were seen. These appeared on different parts of an old house in Atu Ona. According to informants the designs used for house lashings were made by a special *tuhuna* who originated them from string figures. Different designs were used for the front posts, the rafters, and for other structural parts. Another special *tuhuna* put them on. The designs seen were ovals with a black center and brown rim, used at the points of attachment of the small rafters and the cross pieces of the front and rear roofs (Pl. XL, F), and crosses with a band on either side, used at the juncture of the main rafters with the lowest crosspiece. At the juncture of the central rafter of the front roof with the ridge pole two of these designs were placed side by side.

METHODS OF MAKING LASHINGS

The methods of making lashings may be described as follows:

For the oval lashings two cords were used, one of black and the other of brown sennit, both being carried from the left along the top of the crosspiece. The black cord was passed twice around the rafter to form a double hitch whose upper and lower loops were respectively above and below the crosspiece. The cord was then turned back to the left, carried up the

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and eaten as part of the ceremony. The house itself appears to have been of the ordinary dwelling type modified by greatly increasing the height of the roof. One house of this sort in Pua Ma'u is said to have been "three fathoms long, three fathoms wide, and ten fathoms high," but the height at least is almost certainly exaggerated. The end posts were made of several pieces of lumber spliced one above another and placed like those of an ordinary dwelling. There were three front posts. The front was open. The roof was thatched with breadfruit leaves and decorated with figures of birds made from red tapa and split bamboo, between which were placed *koufan* (bundles of sticks). There is said to have been a bird figure for every fathom of height. Within the house there was a *fata'a* called the *anau'u*. The only other objects in the house were three pieces of wood placed one on the *fata'a*, one half way up the house, and another at the top. Each of these pieces of wood was decorated with four designs called *tava* which were so arranged as to form an open square. A *taputoho* lived in this house. [e24] ●

Tona Pou were houses tapu to women in which the men assembled to chant the *puc* (name chant). They are said to have been raised above the ground on posts and, according to Handy (32), were like the *fata'a* except for their larger size.

Canoe houses appear to have been purely utilitarian and did not exist in certain valleys because of the practise of carrying the canoes up into the *tohua* (assembly place) or of dismembering the canoes and distributing the parts among the various owners. They appear to have been most common in valleys having good beaches and the sites of the canoe houses in Pua Ma'u, Hiva Oa, are still remembered. An old man there, who had seen some of these structures, said they were open at one end, like the modern boat houses, but he could give no details of their construction. A modern house in the valley of Hatiheu, Nuku Hiva, suggested a possible form for these structures. One end of this house was like that of an ordinary dwelling. The other end was open. Two heavy posts of equal height were planted on either side. Their tops were connected by a heavy curved beam, convex side up, from the center of which a short vertical timber extended to the peak of the roof, supporting the ridgepole. 349 504

SUMMARY

The Marquesans employed two main house types, the canoe houses possibly forming a third. The simpler houses consisted of a roof resting upon the ground, while in the larger and more elaborate the roof was raised on one side only. Houses of the second type were normally built on terraces or platforms of stone which were often of considerable height. They were used as dwellings and sacred structures. When used for ceremonial purposes some of them were modified by 342

CANOES

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For convenience in description, Marquesan canoes may be considered as of two main classes, modern forms, all of which show more or less European influence; and ancient, or genuine, Marquesan forms. The modern canoes are of two sorts, small fishing canoes and the form called by the natives *vaka poti* (literally, canoe boat), which is a hybrid of the European boat and the native canoe. Only two types of ancient canoe are remembered by the present natives, a small fishing canoe closely resembling the modern one, and a large war canoe. Double canoes, as described by informants, cannot be said to constitute a distinct type. Porter (49), who gives a very good account of the canoes used in Nuku Hiva at the time of his visit in 1813, describes a third type, all memory of which seems to have been lost. He also mentions a form of large double canoe used for long voyages.

MODERN CANOES

FISHING CANOES

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Small fishing canoes are still in constant use throughout the Marquesas. Their structure and method of manufacture may be described as follows:

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They range from twelve to eighteen feet in length with a beam of one foot to eighteen inches and a depth of about eighteen inches. The body of the canoe is hewn from a single log of breadfruit wood which is usually peeled and allowed to season for a time before shaping, but the making of some canoes begins as soon as the tree is felled. The shaping of the outside is completed before the excavation is begun. When the log has been roughly excavated with an ordinary steel axe, a short handled adz with a semicircular cutting edge is used to complete the dressing. The natives are remarkably expert in the use of these adzes, and the cuts left by them are as regular as though made by machinery, even on surfaces that will later be rubbed smooth. The outside of the canoe is rubbed down with sand paper after shaping until all the adz marks are obliterated. In the finished body, the sides are three-quarters of an inch to an inch thick, and the bottoms are from an inch to an inch and a half thick. The sides run parallel for most of the length, beginning to taper inward two to three feet from either end. The bow and stern are indistinguishable, the bottom curving up for about one-third the depth of the body and passing imperceptibly into a straight cutwater. After the body is completed, two holes are bored through each side directly opposite about two inches below the gunwale edge and about three feet from the bow and from the stern. Round pieces of hard wood about three-quarters of an inch in diameter and seven inches long are then driven through these holes forming plugs which are used in the attachment of the outrigger. Two half-inch planks, four to six inches in width, are then placed outside the body, their lower edges resting upon the projecting plugs, and are gradually bent inward at either end, following the curve of the body, until they meet at the bow and stern. The ends of these planks are sawn diagonally to make the joint as tight as possible. These planks are nailed to the body of the canoe and to each other. Small triangular pieces of plank, resting upon the top of the dugout underbody, are usually inserted at bow and stern, forming a short deck at either end. Ordinary commercial hard pine is used for these and for the side planks. No caulking is used; the joints between the body and the sides planks are sealed with several coats of paint.

All canoes are provided with outriggers. The form now in use, which has replaced the original form throughout the group, is known to be the invention of a mulatto who settled in the valley of Tahuku, Hiva Oa, a few years ago. The rapid dissemination of this invention

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indicates the speed with which new appliances of obvious value are accepted by the natives. The new outrigger is indirect, and consists of three elements, the float, the uprights, and the crosspieces. The float consists of a peeled log of fau wood four to five inches in diameter, slightly shorter than the canoe. This is usually sharpened at the forward end only, the cutting being done entirely from the lower side, but a few specimens were seen which had been sharpened at both ends, apparently with the idea of making the canoe completely reversible. The uprights, about two feet long, are usually made of small barrel staves. A triangular notch about two inches deep is cut in the upper end. Eight inches below this notch the uprights are pierced by a rectangular hole an inch and a half to two inches square. These uprights are permanently attached to the float. The unnotched ends of the staves are wedged into longitudinal slits near either end of the upper surface of the float. The crosspieces are peeled poles of fau or hard wood about eight feet long and three inches in diameter at the butt. Their outer ends are sharpened so that they will readily pass through the rectangular holes in the uprights. 501 356 (824)

The outrigger is assembled and attached as follows: The squared ends of the cross poles are fitted into the holes of the uprights, their points projecting about two inches on the outer side. The whole outrigger is then placed on the right side of the canoe, the crosspieces extending across it on the line of the hard wood plugs, with their butts projecting a few inches beyond the left gunwale. One end of a light rope is then fastened to the projecting end of the front crosspiece, outside the upright. The rope is then carried over the top of the upright, through the notch, and along the crosspiece to the inner side of the right gunwale. It is then passed back and forth diagonally over the crosspiece and around the inside and outside ends of the plug until the crosspiece is held rigidly. The rope then runs along the crosspiece to the left gunwale, where the same lashing is repeated. Some slack is then left in the canoe, and the left end of the rear crosspiece is lashed, the rope passing from there to the right gunwale lashing the crosspiece there, and out along the crosspiece and over the end of the upright to the outer end of the crosspiece, where it is tied. Any rope left over is carried back along the crosspiece and coiled in the canoe.

An outrigger of this sort can be attached or removed in a few moments, and the single rope used to lash it is available for other purposes when not in use on the canoe. When a canoe is beached the owner usually removes the outrigger at once and stores it in a safe place, thus making the canoe useless and safeguarding it from theft.

Small fishing canoes of the type described are rarely used for trips of any length. They are not sailed but are commonly paddled by two men. One man sits on the stern crosspiece of the outrigger where it crosses the boat, while the other wedges himself between the thwarts amidships. Most of these canoes are completely reversible, and they are sometimes paddled with the outrigger on the left instead of the right. The narrowness of these craft, and their high center of gravity (for the paddlers sit practically on top of the canoe) make them very unstable, and in spite of the outrigger they frequently capsize. The natives right them by getting on the outrigger and forcing it down under the canoe and up the other side. 502

VAKA POTI

The *vaka poti*—a craft that appears to be a local development—is an interesting example of the native adaptation of European ideas. It may be described as follows: 501

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● [824] As the name indicates, the *ruka poti* is a hybrid of canoe and boat, and is larger and more seaworthy than the fishing canoe, being twenty to twenty-five feet long with a maximum beam of two to two and a half feet. A long strip of breadfruit or temanu wood, eight inches to a foot in width, about four inches thick and tapering to a point at both ends, serves the double purpose of keel and bottom. It is smoothly rounded on the outside and slightly hollowed along the center of its upper surface. This is probably an extreme modification of the dugout underbody of the old built up canoes. Longitudinal slots are cut in either end of this keel and into these two flat, slightly curving pieces of temanu wood are bolted. These serve as the stem and sternposts of the boat, and are identical in form. Short light ribs are then bolted to the keel along both edges, their short lower arms resting upon its upper surface. The sides of the boat are built up with thin planks of commercial lumber which are laid on with an overlap from above downward—that is, the boat is clinker built. These planks are carefully dressed along the points of contact to insure a tight joint, and are fastened into grooves in the sides of the stem and sternpost. The gunwales are finished with a narrow flat strip of wood. At either end of the boat, immediately below this strip, a triangular piece of plank is put in, decking the last two or three feet of the bow and stern. The boat is braced by three broad flat thwarts which also serve as seats. One of these thwarts is placed in the middle and the other two at either end, two to three feet within the edges of the end deckings. The forward thwart is pierced with a hole three or four inches in diameter which, with a corresponding block on the keel, serves to step a mast. These crafts are always provided with an outrigger similar in shape and attachment to that of the fishing canoe, but of proportionately greater size.

Alexander, who visited Nuku Hiva in 1899, saw a slightly different form of outrigger in use with the *ruka poti*. He says (2, p. 746): "From the gunwale to the outrigger float of these canoes is an average of 7 feet. The outrigger frame consists of five pieces of wood, namely, two poles or crosspieces seized across the gunwales $4\frac{1}{2}$ feet apart, one forward and the other aft of center; two stanchions connecting crosspieces of the outrigger float, and a brace which is seized to crosspieces just outside the gunwale. That part of the crosspieces between the gunwales answers the purpose of thwarts, the upper side being hewn to a flat surface. The outboard ends are sized to the perpendicular pieces, or stanchions, the length of which is, as a rule, the distance from the gunwale to the water line. These pieces are sized to the top side of the float, the sizings extending all the way around the float, but done so neatly as to offer little resistance to the water. The crosspieces, float, and stanchions are braced with withes to prevent them from being twisted and thrown out of position by coming in contact with rocks. . . . The material used in sizing the outrigger frame together is coconut fiber twisted into a small line."

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502 A *ruka poti* is normally handled by four men, one of whom sits in the stern and steers with a paddle while the other three row with short oars of ordinary European form. The bow and stern oars are placed on the side opposite the outrigger, the middle oar on the outrigger side, working within it.

Every craft of this sort is provided with a leg of mutton sail of canvas like that commonly used on ships' boats. When not in use the sail is stored under the short deck at one end of the boat, while the poles which serve as mast and boom are lashed along the crosspieces of the outrigger. The heavier of these poles, which is about nine feet long, serves as the mast. When the sail is to be hoisted, the mast is passed through loops of string tied along one edge of the sail, the loop nearest the masthead being firmly tied to the pole. Two light ropes are then attached to the masthead opposite each other and the mast is stepped, the butt passing through the hole in the forward thwart and resting in the hollowed block in the keel. The two ropes from the masthead are then fastened to the forward outrigger crosspiece just outside the gunwales of the canoe. A third rope is sometimes run from the masthead to the prow, but this is not common. The lighter pole serves as the boom and passes through the loops along the lower edge of the sail. The outermost loop is firmly tied to the boom, and a rope is attached to its outer end. The boom is then gradually thrust outboard until the sail is fully spread and only the inner end of the boom rests against the mast. This end simply rests against the mast and is not attached to it.

501 accounts and the fragmentary examples surviving in various parts of the group, it is possible accurately to reproduce the type.

501 Four species of wood were used for the large canoes *mio* (*Thespesia popul-*
 324 *nea*), *temanu* (*Calophyllum inophyllum*), breadfruit, and *hutu* (*Barringtonia*
speciosa). The *hutu* was considered least desirable. *Mio* was rarely used, as large trees of this species were rare and the wood was in great demand for other purposes. Breadfruit wood was usually used for the smaller and poorer boats, while the best craft were made of *temanu*. Even at the present time there is some very large timber in the Marquesas (one *temanu* tree over ten feet in diameter was seen) but there is no native tree which produces a long straight stick at all comparable to the New Zealand *kauri*, and in very large canoes it was usually necessary to make the underbody in two or more sections which were dovetailed together.

396 Before the introduction of metal very large trees were felled with fire, but
 313 the shaping and hollowing appears to have been done entirely with tools. From a
 322 chant collected by Handy (personal communication) the tree appears to have been stripped of its bark and possibly of its branches before felling. The shaping was begun as soon as the tree was felled, the green wood being tougher and more easily worked. The tools used were stone adzes of various sorts, chisels and rubbing stones. (See chapter on Stone Artifacts.)

396 The building of large canoes was in the hands of *tuhuna* (skilled workmen)
 501 who merely supervised the work, leaving the actual labor to the friends and relatives of the owner. According to informants in Pua Ma'u, Hiva Oa, four hundred men (probably an exaggeration), under the direction of four *tuhuna*, were employed upon the last war canoe built there. The work was all done at the place where the tree had been felled, which in this case was high up the valley. Here a large decorated house was built for the workmen, who lived there with the directing *tuhuna* and were fed by the chief for whom the canoe was made. Twenty men are said to have been required to gather the food. The place was *tapu* to women and to all natives from other valleys. According to an informant from another valley some famous warrior slept in the unfinished canoe body every night in order that his *mana* might strengthen the wood and keep it from splitting. The completed canoe was carried down to the beach, probably in sections, and launched. [For an account of the ceremonies attending canoe building and launching see Handy (32)]. In Pua Ma'u the war canoes were kept assembled in special houses at the beach. These houses were undecorated and appear to have had no ceremonial significance beyond the fact that they were *tapu* to women.
 396 Each war canoe was named, a new canoe was given the name of a former one
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501 The rim of the underbody was flat and straight throughout its length, except for the last six feet of the stern where the walls of the underbody were thickened to form a longitudinal ridge about two inches below the upper edge. (See Pl. XLIII, A.) The lower part of this ridge curved smoothly into the corner of the bottom, while the upper part ran back in a flat bevel at an angle of about 40 degrees to the line of the outer edge of the flat rim. The bow and stern of all underbodies appear to have been finished in this way. The tip of the underbody was cut squarely across, and the outside was flat and vertical. The rim was somewhat broader here than along the sides and had, in the center of its interior surface, a broad, rounded point, left at the time of its excavation. This feature is shown in small canoe models, and both the bows and stern of underbodies were probably finished in this way. The projection corresponded to a similar projection on the under surface of the stern and bow pieces, and no doubt helped to strengthen and make rigid their juncture with the underbody.

The inner end of the canoe section observed at Hakaui was especially interesting as it showed the method of finishing a joint. The bottom was cut squarely across, and had no holes for lashings. The sides were cut back for a distance of two feet, the lower edge of the cut sloping upward gradually until its perpendicular inner end was only eight inches high. The surfaces of the side cuts were beveled, running to a thin edge on the inside, and were pierced with triangular holes for lashings. (See Pl. XLIII, B.)

A row of similar holes was pierced through either side of the underbody about an inch below the rim. There were no holes at the ends. The lashing holes were an inch and a half in width and approximately an inch in depth, the base of the triangle being upward, and were placed at intervals of five to six inches.

Along each side of the section there was a row of three small projections which had been left at the time the canoe was hollowed out. These projections were six inches wide and five and a half inches high, the upper edges were two inches below the rim of the underbody. They had been carved into the form of squat human figures with disproportionately large heads, but the details had been practically obliterated. The projections were arranged in pairs, facing each other; the interval between pairs was 9 feet 11 inches. The natives could give no information as to their purpose, but it seems certain that they served as supports for thwarts or seats. The complete underbody had no projections of this sort and these projections do not appear in any of the models studied.

- [824] Both underbodies were made of temanu wood and had been carefully rubbed down inside and out, obliterating all tool marks and giving the surface a finish as smooth as that of an ordinary bowl.

THE BOW PIECE

So far as known no bow pieces of Marquesan built up canoes have survived but excellent descriptions which check up with the accounts of early voyagers and the old canoe models were obtained from informants.

In a canoe with a forty-foot underbody the bow piece would be about fourteen feet long. Its shape (difficult to describe) can be seen from the accompanying photograph of a section of an old and apparently very accurate canoe model (Pl. XLIII, A). For the sake of convenience in description the bow piece may be divided into three parts, the deck, the neck and the figure-head. The deck was the rearmost section, which was enclosed between the ends of the side planks and bounded in front by a transverse flange, the breakwater, which kept head seas from entering the canoe. The deck of the bow piece was of the same width as the underbody, with a flat upper surface and vertical sides. The under surface was deeply hollowed, the lower edges being of the same width as the sides of the underbody upon which they rested. Triangular lashing holes were pierced through the sides a short distance above the lower edge,

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The longitudinal strips covering the outside seams of the canoe were painted black and ornamented at each lashing by tufts of white feathers of the *tevake* bird. The feathers were placed on the stern side of each lashing, and were held in place by the two or three rearmost loops, their inner ends resting directly upon the strip. [237] 501 531

The temporary decorations in most general use consisted of coconut fronds which were placed along the sides of the bow and stern platforms with their lower edges trailing in the water. According to one informant they were also placed along the sides of the canoe, but no mention of this is made by early writers. Stewart (59, p. 244) says that in the large canoe seen by him "between the figure head and the bow, three green coconut leaves, four or five feet high, were fastened erectly." Porter (49, p. 102) says: "The seat of the coxswain is highly ornamented with palm leaves and white cloth." 824

Porter (op. cit.) says that the bow was ornamented with pearl shells strung on coconut branches. [237]

Two cords were run from the rear corners of the stern platform to the tip of the stern piece, these cords being decorated with tufts of human hair and *para-aina* (ornaments made from white beards). These cords are still present in one of the old models, attached to the ends of long poles projecting from the stern platform. It seems probable that long tapa streamers were also attached to the stern piece, as several of the models are decorated in this way. [824] 501 531

Stewart (59, p. 327) says: "A skull was lashed on each corner of the platform elevated at the stern." According to an old informant, the bodies of any enemies killed during a raid were laid across the neck of the bow piece during the homeward voyage. [127]

HANDLING OF THE CANOES

According to informants the large war canoes were never sailed, but small canoes and double canoes, made from two craft of this type lashed together, were sometimes sailed. The paddlers sat two on a seat and paddled rhythmically, usually chanting in time to the strokes. The steersman sat on the raised stern platform, using a long paddle of ordinary Marquesan form. According to one informant there were two steersmen, one on either side. Porter (49, p. 102) says of these craft: "They are not so fleet as might be expected, as our whale boats could beat them with great ease," and all the early accounts agree that they were rather poorly handled. 502

SPECIAL TYPES OF CANOES

Mention has been made of double canoes, but according to all the information obtained by the author these were simply canoes of the built up type which [51] 501

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brief description of the manner of propulsion applies perfectly to the Tongan 501
method of sculling large craft. It would be practically impossible to build a boat
six feet wide and of the same depth on the lines of the built up canoes already
described, and it seems certain that these boats were made either of planks or of
many pieces. Plank canoes were used in the Society and Tuamotu groups and
the Marquesans could hardly have been ignorant of this form of boat.

In a legend of the migration of one of the tribes of Hiva Oa, which was
driven out by its neighbors and went to seek new land, it is stated that they de-
parted on large bamboo rafts. The tribe in question lived on the plateau and were [824] ●
said to have used these craft because they had no wood suitable for canoes. No
details as to the construction could be obtained.

Porter (49, p. 103) says:

"[The natives] use also occasionally a kind of catamaran, which they construct in a
few minutes, and a kind of surf board. . . . These, however, scarcely deserve to be enu-
merated among their vessels, as they are used chiefly by the boys and girls, and are intended
solely for paddling about the harbor."

SAILS

The aboriginal type of sail became obsolete at an early date and it is 501
doubtful whether any of the living natives have seen a genuine ancient sail. In- 205
formants insisted that they were like those in use at the present time except that
the boom sloped upward instead of being horizontal and that the sail itself was
made of coconut mats instead of canvas (pandanus mats were tapu for sails). [824]
This agrees perfectly with the brief mention of Porter and the picture given by
Cook. Porter (49, pp. 102-103) says:

Double canoes . . . are furnished with a triangular sail made of mat, similar to that
called a shoulder-of-mutton sail but placed in an inverted position, the hypotenuse forming the
foot of the sail, to which is secured a boom.

The drawing published by Cook (14, p. 307) shows a single canoe provided
with a mast of rough timber and a triangular sail of matting along the lower edge
of which there is a boom also of rough timber. The boom is set at an angle of
about forty-five degrees, the apex of the triangular sail being at the juncture of
the boom and mast. The upper edge of the sail is concave, and the tips of the
mast and boom project for some distance beyond the fabric of the sail. The mast
is stayed by a rope running from a little below the masthead to the center of the
bow projection, and by three other ropes two of which run to the stern outrigger
crosspiece a short distance outside the gunwales of the canoe, while the third is
attached to the crosspiece near its outer tip. In the picture the sail is directly
over the canoe, between the two inner stays, a system impossible in practice. It
seems probable that the author placed it in this position in order to better show

501 the arrangement of the stays. A slack line is shown running from the outer end
 285 of the boom to the stern seat to control the sheet. In the drawing the lower end
 of the boom is concealed, but it seems probable that, as in the modern sail, it
 was not attached to the mast. In the background of the picture there are two
 small distant canoes one of which is shown under way with the sheet paid out.
 The side stays are fastened to the bow instead of to the stern outrigger crosspiece,
 while the bow stay is replaced by a single stern stay. The second canoe is shown
 with the sail furled, apparently by bringing the boom up against the mast. The
 method of stepping the masts of the ancient canoes was not ascertained. Ac-
 cording to information obtained by Handy, a square rail was used, with a spar at
 the top and bottom.

PADDLES

501 Porter's mention of "paddles more resembling an oar" (49, p. 152) would
 imply that more than one type of paddle was in use in the Marquesas, but all the
 specimens seen or described by informants belong to a single well defined type.

● [824] The paddles were made of rose wood, and were often decorated with carv-
 ing. The manufacture of small highly ornamented paddles of somewhat degener-
 ate form intended for sale as curios has continued until the present time, but the
 natives have lost the skill necessary for the manufacture of the large genuine
 specimens; the only ones seen in actual use were old.

The peculiar shape of Marquesan paddles makes them easily recognizable in any collec-
 tion. (See Pl. XLIII, B.) In length they range from 4 feet, 8 inches to 5 feet, 8 inches, although
 the steering paddles used on war canoes were probably still longer. The average length is slightly
 over 5 feet. For convenience in description they may be divided into three parts, the shaft,
 the blade, and the terminal knob, a projection below the blade.

The shaft is approximately circular in cross section and tapers very slightly toward the
 upper and lower ends. In some old specimens the central part is somewhat flattened laterally,
 but this may be due to long use. The upper end terminates in a cylindrical knob, slightly
 thicker than the shaft, or in a flat expanded transverse grip with a concave upper surface.
 Only one specimen of this sort was seen, the grip in this having been originally two inches in
 width. At the lower end the shaft passes imperceptibly into the blade.

The total length of the blade, exclusive of the terminal knob, is one foot to 15 inches, with
 a maximum width of 6 to 7 inches. The wings of the blade curve outward gradually from
 the shaft to the point of maximum width, which in a blade one foot long is slightly less than 11
 inches from the upper end. From this point they curve inward sharply toward the base of the
 terminal knob. The thickness of the wings at the edges is about $\frac{1}{4}$ inch, this thickness re-
 maining uniform for the entire length of the blade. The center of the blade has a thickness
 of $\frac{1}{4}$ to $\frac{1}{2}$ inch, gradually increasing toward the ends. The outer surface of the blade is con-
 vex, either smoothly rounded or with a slight longitudinal ridge along the center. The inner
 surface is concave, the center, at the point of greatest depth, being sometimes as much as $\frac{1}{2}$
 inch below the level of the wing edges.

The form of the terminal knob may be seen from Plate XLIII, B. The knob is connected
 with the blade by a short neck which curves upward and backward. The inner side of this
 neck bears a rather sharp longitudinal ridge which continues for a short distance up the blade.
 The outer surface is flat or bears a much lower longitudinal ridge which continues for a short

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distance up the blade. The two surfaces meet in a rounded edge into which the wings of the blade blend gradually. The knob proper is set at an angle with the neck, causing it to project slightly backward from the line of the blade. It is sharpened anteriorly and posteriorly except at the rear end of the outer surface, where it is sometimes flat. The knob thickens gradually from the neck to a point about two-thirds of its length from the base, then thins gradually to the tip, which is finished with a blunt edge. 501

This knob is the most characteristic feature of Marquesan paddles and its uniformity in shape and proportion in different specimens seems to indicate that it served some definite purpose. A number of explanations were given by the natives, the usual one being that it caused the paddle to make a pleasant sound when pushed through the water. Other explanations are: That the knob made the paddle a more effective club in sea fights; that it prevented the blade from being splintered when pushing off the rocks; that by means of it the paddle could be rested securely on the forked top of the outrigger; and that it kept the blade from side slipping in the water. The knob does fulfill all these purposes. A somewhat similar knob appears on paddles from Easter Island and Mangareva.

The manufacture of paddles of this sort called for a carefully preconceived design and great skill in execution. The finished instrument justifies the care expended upon it, however, for in balance and effectiveness these curiously shaped paddles are greatly superior to the European forms.

DECORATION OF PADDLES

In pre-European times paddles were decorated with carving applied to the knob at the upper end of the shaft, the blade, and possibly the terminal knob. Carved paddles are still manufactured in the Marquesas for sale to Europeans, and practically all specimens now in museums belong to this class. No authentic ancient specimen was seen, and it is impossible to tell whether the designs employed in the modern paddles are the same as those used in ancient times. 501 531

Two distinct techniques were employed. In paddles made of *niu* wood the designs were simply carved upon the surface. In paddles made of *hutu* wood (*Barringtonia speciosa*) on the other hand, the surface was first charred to blacken it, and the designs were then cut through the blackened wood to the natural white wood underneath, making the finished design show in sharply contrasted black and white. *Hutu* wood was rarely used for real paddles, and it seems doubtful whether this second technique was applied to paddle decoration in ancient times. 501 531 824

The knob at the upper end of the paddle shaft was carved either into two small tiki figures, placed back to back, or into two heads similarly arranged. The convention of representation was the usual one, flat features, spectacle eyes, and broad mouth. In some paddles the space between the figures was pierced. [32]

The paddle blades were elaborately carved on both the upper and lower surfaces, and in one specimen the decoration extended a short distance up the shaft. The area to be decorated was divided transversely into three or more zones which were treated as separate units. The lowest of these zones was semicircular, the outer edge corresponding to the bottom of the paddle blade. There was a strong tendency to make a large semicircular figure the principle feature of

501 at least one other zone. In all the specimens seen there was a complete absence
531 of simple angular-geometric designs of the house post type. The designs used were selected about equally from those regularly used for tattooing and bowl carving. Tiki faces and even flattened figures were noticed in a few paddles. Edge-Partington (20, p. 5) shows a paddle having a design carved on the inner side of the blade and two heads in high relief on the outer side.

It would appear that paddle designs did not constitute a distinct class. All the specimens studied are more or less recent, however, and it is quite possible that there were originally distinctive paddle designs which have been gradually overlaid or lost. In many of the commercial specimens the terminal knob is decorated with very simple angular-geometric figures like those carved on house posts, but it is impossible to say whether the practice is ancient.

BAILERS

501 The constant leaking of a built up canoe made the bailer a necessary part
[824] of its equipment, and bailers of the ancient form are still in constant use throughout the group. These bailers are made of *mo* or *temanu* wood, and are shaped like a sugar scoop with the handle reversed, that is, projecting forward over the cavity. The top of the bailer is perfectly flat, the upper side of the handle being flush with the edges of the scoop. The bottom is also flat, rounding up gradually in the rear. The forward edge of the scoop is straight, the upper corners being rounded off. In ancient times some bailers were carved, but no decorated examples were seen. (See Pl. XLIII, D and E.)

CANOE MODELS

Numerous references have been made in the course of this paper to canoe
[439] models. At the present time many of these models are made for sale to Europeans. The industry centers in Fatu Hiva. It is certain that models were also made in early times, and there is mention of their use in connection with religious ceremonies. The modern models are elaborately carved all over; the designs used are borrowed from tattooing and bowl carving. (See Pl. XLIV, B.) The designs used upon the superstructure are usually simple angular-geometric motifs of the sort said to have been used upon the actual canoes, although in the recent specimens there is a tendency to apply curvilinear designs to these parts also, especially
[624] to the side planks. Many of the recent examples are made of *hutu* wood, treated by the method mentioned in connection with the paddles.

The desire for quantity production has led in the newer models to a lack of accuracy in the proportions of the various parts and the omission of all details not visible when the canoe is assembled. They can therefore serve as a guide only to the general form of the ancient craft. The really old models

412 chisels is much less satisfactory. It is certain that the Marquesans, like the Maori, did employ hafted chisels, but no old specimens are now extant.

ADZE HAFTINGS

Only three hafted adzes were seen and one of these was made by the informant who made the chisels. The other two specimens were of considerable age, and all three agreed closely in form. The blades in all three specimens were of *toki kouma* type. The use of other forms of blade may have necessitated slight changes in the form of the haft.

● [824] Adz handles were usually made of *fau* wood, care being taken to select old trees as the young shoots are too soft and brittle for the purpose. In one chant the use of *noni* roots is indicated and in another that of *mio* wood (Handy personal correspondence). A branch and a section of the trunk immediately above it were detached, and the natural hook thus obtained was worked down into a more or less smoothly rounded elbow having the two sides of unequal length. The long arm served as the handle and was made from the branch, the short arm to which the blade was attached, was made from the trunk. The entire haft was thickest at the curve of the elbow, the diameter of the two arms gradually decreasing toward their ends. A socket for the blade was cut in the outer surface of the short arm. The upper end of this socket was at about the level of the inside of the curve at the elbow. The form of this socket naturally varied with that of the blade it was intended to accommodate. In all the specimens seen, the socket was flat, running the entire width of the handle and being out squarely across, or only slightly rounded at the upper end, but many of the blades collected must have required a socket semicircular or triangular in cross section, and tapering toward the upper end so as to fit the contour of the blade accurately.

412 The tang was wrapped in two or three thicknesses of *tapa*, which were so
284 arranged that they intervened everywhere between the stone and the lashings, and socket. The purpose of this wrapping was to increase the friction of the lashings and keep them from loosening. The lashings themselves were made of three plait coconut fiber cord of medium weight, and although carefully laid on were not ornamental in the specimens seen. According to informants ornamental
[824] lashings of red and black sennit were used on at least some special adzes.
[531] (Handy, personal correspondence.)

The arrangement of the lashings in two specimens was very simple, consisting of a single cord beginning at the lower end and passing round the blade and haft. The loose lower end of the cord was carried back up the inner surface of the haft and held in place by the subsequent turns of the lashing. The upper end was thrust down under the two or three uppermost laps on the inner surface

412 curved edge. Each of these adzes has its special use and in doing any piece of work, as the shaping of a bowl, great care seems to be taken to use the proper tool for each stage of manufacture. In working any surface a series of light glancing blows are struck instead of two or three heavy ones. Informants agree that this was also the ancient system. The blade of a stone adz could easily be shattered by a heavy direct blow, and it is related that when a *tuhuna* who had been employed to make some object became dissatisfied with his pay or working conditions he would strike a heavy blow, breaking his adz, and with this as an excuse, refuse to finish.

The small straight bladed adzes are also used as planes. The handle is grasped at the curve, with the blade below the hand, edge forward, and the tool is pushed along the surface of the wood, removing a thin shaving. Stone adzes are said to have been used in the same manner.

Very little data could be obtained on the method of using the hafted chisels other than that they were used to hollow drums and cut the lashing holes in canoe parts. They were struck upon the upper end of the shaft with a *toa* wood mallet like that used in caulking canoes. (See Pl. LVI, B.)

GOUGES

412 The Marquesan collection in the Bishop Museum includes four implements uncommon to the group, and it has been thought best to describe them separately under the head of gouges although it can not be said with certainty that they were not hafted and used as adzes. The implement shown in Plate XLVII, B, 2 is $6\frac{3}{4}$ inches long, $1\frac{3}{4}$ inches wide at the bit and $1\frac{1}{4}$ inches wide at the upper end. It is almost semicircular in cross section. The cutting edge is curved, but the lower side of the bit, which is ground with a well marked bevel, is flat. The implement fits the hand well and does not appear to have been hafted.

Only slightly smaller than No. 2 and with a similar bit, gouge No. 3 shown on the same plate is distinguished from it by having parallel sides.

No. 4 on the same plate shows a small specimen whose shaft has been broken. The bit has a width of $11/16$ inches and its lower surface is slightly concave. The body of this gouge is almost circular in cross section and well polished throughout, although the marks of the chipping have not been completely obliterated. The bit shows use and sharpening, and the implement was probably a carving tool.

No. 1 on this plate is completely ground and has a narrow upper and broad lower surface, both of which are flat, while the sides are somewhat rounded. The upper surface narrows toward the rear so that the blade is almost triangular at the butt (the point of greatest thickness) and the whole shape is reminiscent of

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the lower part of a narrow *toki kouma* whose tang has been broken off. The implement appears to be complete however, and shows no signs of hafting. It is possible that this implement marks a transition from *toki kouma* to gouges and that the two classes of implements are related. 412

KNIVES AND SCRAPERS

Marquesan knives were usually made from bamboo or shell, and shells were used as scrapers, but stone knives and scrapers also existed. In the absence of iron tools, stone knives have been used as a makeshift until comparatively recent times. Pere Simeon Delmar, head of the Catholic Mission in Taiohae, Nuku Hiva, has witnessed the manufacture of stone knives. He says that the knives, often six to eight inches in length, were made from flakes of a special variety of phonolite, which were detached from a core by a single sharp blow with a rounded stone held in the hand. The natural fracture gave a fairly sharp edge to the flake and it was used without retouching or hafting. When the edge became dull from use, the implement was thrown away. In M. Delmar's experience these stone knives were used only to open and scale fish. Many phonolite flakes were found in old village sites, but their certain identification as knives is impossible. (See Pl. XLVIII, G.) [824] [321]

Two stone artifacts were collected which appear to have been scrapers. One of these, found in an old village site, is a large semicircular spall of some basaltic rock which has evidently been retouched along its lower edge. Its form is not unlike that of some of the shell scrapers used for tapa making. (See Pl. XLVIII, E, 1.)

The second specimen was collected on the island of Ei Ao. It is a thin spall of phonolite which has been worked into rectangular form and dressed along the outer end and one side with an abrupt retouch. This implement appears to be complete, and is much too thin and carefully worked to be a reject from the adz workshops. It was identified by natives as a scraper. (See Pl. XLVIII, E, 2.)

RUBBING STONES

The Marquesans used rubbing stones in the manufacture of various wooden objects and in dressing the large stone slabs which are a common feature of their masonry. The large rocks upon which adzes were ground and polished have already been described (p. 321) and mention has been made of the probable use of whetstones, but it is uncertain whether rubbing stones were used in the manufacture of other stone artifacts. The modern makers of *popoi* pounders deny their use, and none of the ancient artifacts show a finish which could not have been produced by careful pecking and a final polishing with sand. The large flat 412 324

4/2 and the method of hafting is problematical. The objects carved with rats' [324] teeth indicate that the work was done by continued rubbing rather than by strokes of the chisel, as the bottoms of the carved lines show a high polish.

The most important wooden tool appears to have been the mallet. This was employed with the chisel in shaping and carving wooden objects, and was also used with caulking tools. Mallets were made of *toa* wood, and were short and heavy. The specimen shown (Pl. LVI, B) is 11 inches long, with a maximum width at the head of 4 inches, and a maximum thickness of $1\frac{3}{4}$ inches. The handle of the mallet was round or rectangular and was frequently pierced near the outer end for the attachment of a wrist loop. The head was pear shaped in outline, expanding and thickening gradually toward the outer end. The sides and end of the head were flat, with a surface at right angles to that of the broad surfaces. In use the blow was struck with the broad face, not with the edge.

No specimens of the ancient caulking tools were seen, but those used on the bow and stern seams of canoes are said to have been wedge shaped. Those used for the lashing holes along the sides were simply pointed sticks with a flat upper end. The favorite material for these implements was *toa* wood.

A long needle of hard wood (Pl. LVI, C) was used to sew on house thatch and to pass the cord used in canoe lashings through the lashing holes. The specimen collected is slightly over a foot in length. On one side of the point there is a short barb. The butt has a small knob, to which the cord was attached.

The pump drill was the most elaborate of the Marquesan tools. Apparently no examples have been preserved, but their form and method of use are still remembered by the older natives. The Marquesan drills appear to have been identical with those used elsewhere in Polynesia, although there are indications that some of them were equipped with stone whorls, a rare feature. According to informants, drill points were made in ancient times from a sliver of stone, a shark's tooth, or a rat's tooth. All these materials were replaced at a very early date by iron nails obtained from Europeans.

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DOMESTIC IMPLEMENTS

This section deals with the artifacts, other than containers, which formed ¹²⁸ part of the equipment of a Marquesan household. The implements were for the most part used either in the collection or preparation of food.

TOOLS FOR FIRE MAKING

Fire was made in ancient times in the Marquesas by means of the fire ³⁷² plow, a method common to all Polynesia. The fire plow consisted of two parts, the bed and the plow (Pl. LVI, G.)

The favorite material for the bed was a large dry stem of the fruit cluster of the coconut palm which, being fibrous, aided in the collection and retention of dust upon which the success of the operation depended. The second best material was fau wood. The bed was not as a rule shaped, but in the better specimens its top was flattened slightly to prevent the plow from slipping during the first few strokes. A little earth was, sometimes rubbed on the bed at the beginning of the operation to increase the friction. [824]

The plow was simply a short stick, usually of fau wood, sharpened to a straight or slightly convex edge, about one-fourth of an inch wide.

In fire making two men were usually employed, one of whom held the bed firm while the other manipulated the plow (Pl. LVI, H).

The bed was placed upon the ground with the end toward the plowman slightly elevated. The plow was grasped in both hands, forming an angle of about 45 degrees with the bed, and was rubbed rapidly back and forth, care being taken to stop each downward stroke at exactly the same point. As the rubbing continued, a groove was formed in the bed and a small pile of wood dust collected in the lower end of this groove. The speed of the rubbing was gradually increased until both groove and plow were smoking; then, at the right instant, the point of the plow was driven slightly beyond the end of the previous strokes and buried in the dust. A spark was thus kindled and gently blown to a coal, then dumped off into tinder made from tree cotton or shredded coconut fiber. A new groove was made each time fire was to be kindled.

In spite of the introduction of matches practically all adult Marquesans can still make fire by this process, and the time required is surprisingly short. One expert individual repeatedly made fire in between 25 and 30 seconds. The process requires a perfect muscular control which is only acquired with long practise, the trick lying in stopping all the strokes at exactly the same point and lengthening the last only enough to bury the plow in the dust without scattering it.

Native informants insisted that fire was kindled in ancient times by striking sparks from two stones, but it seems probable that this process was borrowed from Europeans at such an early time that its origin has been forgotten. Fire making sets consisting of quartz crystals, a piece of steel, and a section of bamboo filled with tree cotton are still used by the poorer natives.

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Memoirs Bernice P. Bishop Museum

IMPLEMENTS FOR COLLECTING AND PREPARING BREADFRUIT

413 Breadfruit is still the Marquesan staple, and utensils for collecting and pre-
 245 paring it form part of the equipment of every family. These utensils may be
 divided into two classes, those used in collecting and transporting the fruit,
 and those used in preparing it for food.

NETS AND CARRYING STICKS

245 Breadfruit nets are of two sorts, small picking nets and large carrying
 206 nets. The picking net consists of shaft and head.

413 The shaft is a long straight pole of some light wood, usually fau. The head con-
 [824] sists of a net woven on a forked stick, one foot to 18 inches long. The fork is tied to the
 shaft and is bent backward so that it stands almost at right angles to the shaft. The wood
 of a tough vine is usually used for the fork, the angle being given by bending the wood while
 green and tying the prongs back to the shaft until the wood dries. Within the fork, which is
 six to eight inches long, a small net is woven having a depth of eight inches to one foot. Com-
 mercial string is used for these nets, replacing the sennit of former times. The mesh of the
 net is large and the knot is like an European square knot. In use, the picker is lifted until the
 fruit is enclosed in the net; the stem is then caught in the angle of the fork and broken by
 a slight twist. The fruit are usually picked one at a time and transferred from the picking net
 to the carrying net, which is hung in the trees near the picker. The average carrying net is
 about 18 inches in diameter and three feet deep. This net (Pl. LVII, A) is also usually made of
 commercial cord, although sennit is still used. The top of the net is held open by a hoop made
 from a sapling about three-fourths of an inch in diameter, which has been steamed in an
 earth oven until it is pliable, bent until the ends overlap, and the juncture covered with many
 laps of cord. The net is suspended from the carrying stick by three ropes of twisted bark,
 woven together in the center to form a loop, the ends of ropes being tied to the hoop at
 equal intervals. The bottom of the net is finished with a ring about two inches in diameter
 made from two strands of sennit. About this ring the bottom strands of the net are passed
 in closely spaced double half hitches.

482 Carrying sticks (for transporting the fruit to the house) are simply poles
 one and a half to two inches in diameter cut from the nearest clump of fau. In
 ancient times, more carefully made carrying sticks are said to have been used;
 smoothly finished, and with notches at either end protected by a raised flange.
 No specimens were seen, and it is probable that even then ordinary carrying
 sticks were nothing more than saplings.

IMPLEMENTS FOR PREPARING BREADFRUIT

252 The implements used in preparing breadfruit vary according to whether
 413 the fruit is to be made into *ma* and stored, or is to be eaten at once. In *ma*
 making large numbers of the fruit are gathered and piled up to ripen. The
 ripening is hastened by piercing each fruit at the stem end with a pointed stick
 (Pl. LVII, D) or with a piece of crushed bamboo. When the bamboo is used, it
 is broken off at the surface each time, leaving a fragment of the bamboo in the
 fruit.

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A special tool (Pl. LVII, C) made from the shell of a cowrie (*Cypraea mauritiana*) is used for peeling the ripened fruit. 413
252

An oval hole with sharp edges is ground through the rounded end of the shell. At the opposite end the top is broken away, the base of the shell and a strip across the center being left intact. When in use, the shell is held in the hand transversely, with the base against the palm and the sharp edge toward the outer side of the hand. It is moved downward and away from the body. The peelings cut off by the sharp edge pass through the shell and fall out at the rear aperture like the shavings from a plane. These peelers are remarkably rapid and effective, superior to any European tool for peeling breadfruit.

It is interesting that an identical tool is used in Kuschai, in the Carolines, although it is not reported from other parts of Micronesia. It is im- [171]
possible to outline the Polynesian distribution of this tool. It was used in the Society Islands, but not in Hawaii, and seems to be absent in Tonga.

When properly ripe, the breadfruit are soft enough for the raw pulp to be easily separated from the core with the fingers. Slightly unripe fruits are sometimes cut up for *ma* making. In ancient times this was probably done with a wooden breadfruit splitter. An implement of this sort in the Bishop Museum is eight inches long, with a maximum width of four inches. (See Pl. LVII, B.) It has a long oval blade terminating in a broad flat knob. Only the outer end of the blade is sharpened. It is made of some rather hard, light weight wood.

Fresh breadfruit are roasted on an open fire, the proper moment for re- 252
moving them being determined by the sound they give when tapped with a stick. 412
They are lifted from the fire with two sticks, or, in well equipped households, with tongs.

These tongs are made from a single straight piece of wood, preferably *mio*, about 2½ inches in diameter and 3 to 4 feet long. The wood is split for the lower two-thirds of its length and the ends spread apart. A few turns of *fau* bark are usually tied around the upper part of the stick to keep it from splitting in two. Tongs of this sort are also used to arrange the hot stones used in the earth oven, or *umu*. [824]

The charred outer surface of the breadfruit is removed with a knife of wood or bone. Most of the wooden knives appear to have been simple sticks with one end fashioned into a thin blade. Any wood, even that of the *fau*, might be used. (See Pl. LVII, E.) The bone knives are more carefully made (Pl. LVII, F.) As all those seen were shaped from the leg bones of cattle it seems doubtful that the type is an ancient one.

The upper end is squared and rubbed smooth, the natural swell of the bone at the joint giving the handle a slightly expanded butt. The blade is formed by grinding away one side of the shaft. The average knife is 9 inches long, with a blade length of 4 inches. The blade is 1½ inches wide at the base, tapering toward a broad rounded point.

After peeling, the breadfruit is dropped into the *popoi* trough, cored, and beaten into a paste with the *popoi* pounder.

415 The *popoi* trough is usually made from breadfruit wood. An average specimen is 5 feet
252 long and 16 inches wide, with square ends, straight sides, and a rounded lower and slightly excavated upper surface. In new specimens the depth of the hollow rarely exceeds 1½ inches but in old specimens it may be as much as 3 inches deep in the center, due to wear. In one very old *popoi* trough, evidently made with stone tools, the interior had been hollowed with fire. The dimensions of individual *popoi* troughs vary considerably, but those used in Nuku Hiva are on the whole shorter and broader than those used in the southern islands.

IMPLEMENTS FOR PREPARING COCONUTS

412 Coconuts rank next to breadfruit in the Marquesan dietary, but they
252 seem to have been somewhat less important in pre-European times. They are gathered by hand, without special appliances. The first step in their preparation is to remove the thick husk. This is done by means of a pointed stake, about two inches in diameter, which is fixed rigidly in the ground, point up. To husk the nut it is grasped in both hands, struck sharply upon the point of the stake, and twisted away from it, removing a sliver of the husk, the process being repeated until only the inner shell remains. The process appears easy, but it calls for a considerable skill in manipulation. Nuts are usually husked where gathered, to avoid carrying unnecessary weight.

Nuts other than the thinnest shelled drinking nuts are opened by a few sharp blows of a stone given along the line of greatest diameter, an expert being able to break a nut into two almost equal halves in this way. The water in the cavity of old nuts is thrown away, and the flesh itself, rarely eaten, is grated to extract the milk. Coconut graters vary considerably in the details of form, but are all made upon a single principle.

The graters consist of a stool, or seat of some sort, from one end of which an arm projects more or less horizontally. At the end of the arm the actual scraper is fastened. In ancient times this consisted of a piece of rough coral, or of a strip of shell with the upper edge cut into teeth. Much care is expended upon the seat portion of some of these scrapers, which appears the more remarkable as the furniture of a Marquesan home rarely includes stools or other raised seats. To use the scraper the workman places himself astride the seat, and rubs the nut rapidly over the end of the arm, with a downward and outward motion. A bowl placed below catches the fragments of meat as they fall. When a sufficient quantity of the grated meat has collected, water is added and the whole mixed to a paste.

A strainer is then brought into play to separate the milk from the meat.

This strainer is nothing more than a thick bundle of fiber, about one foot in length and two to three inches in diameter, which is spread out and drawn across the bowl toward the workman, gathering up part of the paste. The ends of the strainer are then twisted in opposite directions, enclosing the paste, and the whole lifted from the bowl and wrung out, the liquid expressed falling back in the bowl. The dry meat remaining in the strainer is thrown away and the process repeated until only a thick creamy white fluid remains in the bowl. Two species of fiber are used for strainers, the commoner is that from the husk of the coconut. The finer strainers are made from the fibers of the stem of a long-leaves plant, which in leaf form and habit of growth resembles large garlic, and from a reference in Jardin (33) is probably *Cyperus maritimus*. No attempt is made to separate the fiber from the substance, the stems are simply split into long strips. (This fiber is also commonly employed for kava strainers, but there is a con-

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ventional difference in the method of straining the two substances, kava being squeezed with one hand only while coconut milk is wrung out with both hands.)

Copra, the dried kernel of the coconut, although not a food, plays an important part in Marquesan domestic economy. The old method of copra making was as follows:

The ripe nuts were husked and broken into two equal halves by the methods just described. These halves were tied together, back to back, by wisps of the husk left attached to them for the purpose. They were then hung up high enough to be out of the reach of pigs and left until the kernel was partly dry and had begun to separate from the shell. The meat was then removed with a special tool made of *tos* wood.

These tools (Pl. LVI, D) have a smoothly tapering handle whose outer end is pointed, and a flat or slightly concave blade which curves upward toward its tip. In length they range from 10 to 14 inches and in blade width from $1\frac{1}{2}$ to $2\frac{1}{4}$ inches. In modern copra making these wooden knives have been largely replaced by tools having an iron blade of somewhat similar form.

Tree cotton appears to have been introduced into the Marquesas in post-European times and the appliance used to separate the fiber of this tree from the seeds is probably an introduction (Pl. LVI, F). There is some uncertainty on this point, however, and it seems well to describe the tool as though it were a Marquesan invention.

The instrument consists of a straight piece of *fau* wood about 20 inches long and $\frac{3}{4}$ of an inch in diameter whose lower end is split into four equal parts. Two slivers of bamboo, each about four inches long, are placed in the splits at right angles to each other about two inches above the tip of the shaft and lashed with thin string. The tips of the bamboo and of the splints of the shaft are sharply pointed. To use the implement the lower end is placed in a mass of mixed fiber and seeds and the shaft twirled rapidly back and forth between the palms until a mass of fiber has collected around the points. This clear fiber is then removed and the process repeated until only the seeds remain. It should be remarked that the seeds of tree cotton are not covered with lint and separate from the fiber much more readily than the seeds of the commercial cotton.

MISCELLANEOUS DOMESTIC IMPLEMENTS

Digging sticks were employed in agriculture, also in digging earth ovens and *ma* pits. They appear to have been simply poles four to five feet long made of some hard wood, *tos*, *kookuu*, and *piapiu* being the species preferred. The shaft was about three inches in diameter and was sharpened at the lower end into a broad flat edge. In view of the close resemblance between Marquesan stilt steps and the foot rests of Maori digging sticks, it seems rather curious that the Marquesans never hit upon this simple improvement. Digging sticks are no longer used in the group, and no information was obtained as to their exact method of use.

Before the introduction of iron, bamboo knives were used for cutting a variety of soft non-fibrous substances. These knives are now obsolete and no specimens were collected.

412 According to the accounts of informants the bamboo knives were slivers, one-half to three-quarters of an inch in width, from the stalk of the smaller of the two native species of bamboo. When first split off, the outer coat of the stem gives a surprisingly sharp edge, but this soon becomes dull with use. When a knife became dull it was usually thrown away and another sliver selected; but it was occasionally sharpened by tearing a thin strip off the edge with the teeth. Jardin (33, p. 53) says that knives made from this bamboo were used to dispatch human victims for sacrifice.

[824]

[782] Knives made from sharpened pearl shells were used, also stone knives made from long flakes.

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[824]

On the rare occasions when an indoor light is required the natives use candles made of *ama* nuts. The ripe nuts are baked in an earth oven, the shells cracked, and the oily kernels extracted whole. These kernels are then strung on the stiff midrib of a coconut leaflet, the lower end of the midrib being left bare for some inches to serve as a base, or handle. As far as can be learned no special candle holder is used. The lower end of the midrib is simply thrust between two stones of the paved house floor. When ignited, the kernels burn slowly, with a flickering smoky flame and the light requires constant tending, as it is necessary to knock off the cinder of each nut with a short stick as soon as the fire had passed to the one below. It is rather curious that lamps appear never to have been used by the natives in the Marquesas, although their use was common in both the Society Islands and Hawaii. Torches were rarely used for interior illumination, but are still extensively used in night fishing. (See p. 397.)

[171]

GOURDS

The Marquesans appear to have made a rather limited use of gourd containers. No gourd plants were seen growing, but from a comparison of the utensils collected with those in the Bishop Museum the species was probably *Lagenaria vulgaris*. According to informants, both necked bottles and neckless containers were formerly used, but all the specimens seen were neckless and were called by the natives *hue*. To make a *hue* the ripe gourd was plucked from the vine while still soft and the stem and adjacent shell cut away to form a round aperture three inches or more in diameter. The seeds and pulp were emptied out and the shell carefully dried in the shade. The interior was then scoured smooth with beach sand. Utensils of this sort appear never to have been decorated and ornamental shapes made by deforming the growing fruit had never been heard of by the informants questioned. All the *hue* seen were comparatively small, the largest being slightly under one foot in diameter, but the size of some of the wooden *hue* tops seen in burial caves would indicate that much larger utensils of this sort were formerly used. (See Pl. LVIII, E).

When in use the *hue* was supported and protected by a network of cords similar in principle to the Hawaiian *koko* (net), but rather inferior in design and execution. The manufacture of these nets has been discontinued and only two specimens were seen in the group, both in Pua Ma'u, Hiva Oa. Both were made of coconut fiber cord. Ordinary sennit of the sort used for house lashings was used for one specimen, and for the other, a flat five strand plait. The form of the nets may be seen from the accompanying sketches. For *hue* No. 1, on Plate LVIII, E, the process of manufacture appears to have been as follows:

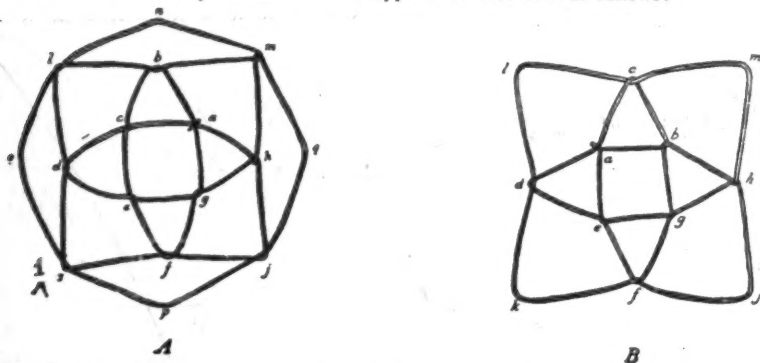


FIGURE 7.—Sketches of network of cords used to support gourd containers.
[97]

¹/_A [this should be k, in light of description on page 358—Analyst]

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WOODEN CONTAINERS

The Marquesans made a great variety of wooden containers all of which may be placed in one or the other of two main groups: boxes, and bowls or dishes. The objects of each of these classes show considerable individual variation, and in the case of covered containers it is often difficult to say whether a given specimen is a bowl or a box. 415

BOXES

Wooden boxes, used for the storage of valuables, formed part of the equipment of every well-to-do Marquesan family. Such boxes were hewn from large pieces of wood by the processes described under bowl manufacture. (See p. 360.) The favorite materials were breadfruit, *temanu* and *mio*. The boxes varied greatly in size and in minor details of form and decoration, but all the specimens seen were clearly of a single type. They were made in two parts, a body and a lid. (See Pl. LIX, A.) [824]

The body was oval in outline, with a more or less rounded bottom and considerably recurved sides; the upper edge was finished in a narrow flat rim which was broadened at either end. At one end of the body a large knob projected above the rim, while at the opposite end the body was either flattened or bore a short flat-ended horizontal projection. The lid was rounded on the outside, excavated inside, and bore along the inner edge of its rim a thin downward projecting flange which accurately fitted the orifice of the body. The end which rested against the knob of the body when the lid was in position was either flat or notched. The opposite end was elongated and provided on the under side with a short downward projection like a thick blunt hook, which rested against the outside of the body.

In one specimen, which differs in other details from the normal type, the rear end of the lid bears an upward projection corresponding to the knob of the body. (See Pl. LIX, B.) In well made boxes the lid fits the body so closely that it is frequently difficult to remove it. The whole utensil appears to be a more or less modified bird form, the body knob representing the head; the horizontal projection of the lid, the tail. (See Pl. LIX, C.) Boxes were frequently carved and the designs were usually the same as those used upon bowls. The first step apparently was to carve the body knob into a tiki face, and specimens in which this constitutes the sole decoration are not uncommon, although the more ornate examples are carved all over. In one crudely carved specimen in the Bishop Museum the designs show a preponderance of angular-geometric figures coupled with small line representations of human beings which are not of tiki type. (See Pl. LIX, B.) 415 531

BOWLS AND DISHES

Wooden bowls and dishes are probably more numerous in ethnological collections than any other objects of Marquesan manufacture, as the elaborate carvings with which many of them are decorated make them eagerly sought after by collectors. They still form part of the equipment of every native household 415

415 and are manufactured in considerable numbers. No lathes have ever been intro-
 [322]duced into the Marquesas, and all wooden utensils are still made by aboriginal
 processes modified only by the introduction of metal tools. The modern makers
 have ceased to reproduce the more elaborate ancient forms and ordinary utensils
 are rarely carved at the present time; but skillful carvers are still found in Nuka
 Hiva and Hiva Oa, and especially in Fatu Hiva, which was formerly the artistic
 center of the group.

415 The Marquesans employed a great variety of woods for their utensils, the
 824 favorite being *mio* (*Thespesia populnea*). This tree has a dark brown heart
 wood and white sap wood, while its softness and even texture make it especially
 easy to carve. Next in importance came the *temanu*. This wood is light red to
 yellow in color and somewhat harder and less even grained than the *mio*, but still
 well adapted to the purpose. The trees attain a very large size, and on this ac-
 count *temanu* appears always to have been used in ancient times for feast bowls
 and other large vessels. Most modern utensils are made of this wood, as
 the supply of large *mio* is practically exhausted. *Mei* (breadfruit) was used to
 a limited extent, but was considered an inferior material. *Fau* wood, when
 taken from old trees, was occasionally used, and small more or less ornamental
 vessels were made from sandal wood or *toa*. *Toa* was especially difficult
 to work on account of its hardness and its tendency to split, and objects
 made from it seem to have been primarily intended to show the skill of the work-
 man. A number of other woods were sometimes used for special purposes or in
 the absence of better material, but according to informants, *vai*, a close grained
 red wood which appears well adapted to bowl making, was never used because
 it would split when exposed to the sun.

415 Modern bowl makers shape their utensils with adzes and knives, but
 322 knives are little used. The adzes are provided with iron blades made either from
 plane irons or from sections of iron pipe, which has replaced the stone blades
 of the *toki kouma* type. (See p. 323.)

A well equipped workman employs a whole series of adzes of diminishing size, the last
 used being miniatures only a few inches in length. Green wood is used when possible, as it
 is softer and easier to work, but seasoned wood can also be used for bowls after it has been
 soaked in the river for several weeks. A block considerably larger than the intended object
 is first roughed out from the log, and is then worked down with the adz until the desired out-
 line has been obtained. In all the examples seen approximately the final form was given to the
 exterior before the excavation of the interior was begun. In making round bowls a pair of
 European compasses are now used to outline the rim, but the shaping of the body is done en-
 tirely by eye. In shaping the exterior a light glancing blow is used, the chips detached being
 of such uniform size that a well made bowl just prior to polishing is covered with a multitude
 of small regular facets like those on a bowl of beaten brass. In excavating the interior the
 workman begins at the center, and gradually works back to the edges, hollowing the whole in-
 terior to the depth of about an inch. He then begins at the center once more and excavates
 another level, continuing until the desired depth is reached. The inside of an unfinished bowl

415 Round wooden bowls (Pl. LIX, F) are still in use in all native households. The larger bowls are called *pora*, the smaller *ipo* or *tahake*.

In bowls of ordinary sizes the form is that of a segment of a sphere, but this is somewhat modified in the case of the large feast bowls, which are rarely over nine inches deep, although they may have a diameter of over four feet. Flat bottoms, meeting the sides at an angle, appear to be unknown. In most large and many small specimens the sides have a slight external recurve at the rim, and in practically all round bowls the greatest width of the interior is a short distance below the rim. The rims are flat and relatively wide, meeting the inner and outer surfaces of the body at sharp angles. In most bowls the rim is horizontal but in some the inner edge is considerably higher than the outer.

415 At least two types of very deep circular bowls were used in ancient times. One of these, called *kipo*, was used on the island of Nuku Hiva for *kava*. It was 764 about ten inches tall and eight inches in diameter, and is said to have been provided with a small flat base (Handy, personal correspondence). In Hiva Oa a [924] large, very deep bowl of *toa* or *pio* wood was sometimes used in the burial caves as a container for the skull of a chief or beloved relative. The practice was rare, however, and the description is based upon a single specimen found some years ago in a burial place. The original bowl was not seen as its finder had used it as a container for his wife's skull, but according to natives who had handled it, it was elaborately carved and had the form of the deep Hawaiian *umeke* (8, a, p. 161 and fig. 142).

415 A description of a special type of small circular container, called *hue po'o* was obtained in Pua Ma'u, Hiva Oa, by Handy.

266 This container was provided with a lid having a knob handle in which there was a cavity much like the sponge container of a modern humidor. Human flesh was packed into the cavity, and as it decayed the juice dripped down into the bowl below. The fluid was wiped out from time to time with green taro leaves and eaten as a delicacy. The object of the peculiar handle arrangement is said to have been to guard against the theft of the flesh. The container was provided with a long loop handle, probably like those used on coconut bowls, and was carried slung around the neck.

Many circular bowls were provided with fiber handles which were attached to one side and served for the suspension of the utensil when not in use. The simplest of these handles consisted of a loop of sennit passed through a hole below the rim of the bowl and held by a knot on the inside. In another simple form two holes were drilled, the loop being passed through both. The most characteristic handle attachment, which is still used on most well made bowls (Pl. LIX, D) is made as follows:

A hole is bored in the side of the vessel a short distance below the rim, care being taken not to pierce the inner wall. A second hole is then bored downward through the rim, meeting the first at right angles. A loop of cord, braided continuously or spliced at the ends, is then inserted in the lateral hole and fastened by a wooden plug driven downward through the vertical hole. The top of the plug is cut off flush with the rim. Handles of this sort were sometimes decorated by stringing upon the loop large seeds or pieces of carved bone.

FIBER AND CORDAGE

The material most commonly used for Marquesan cordage appears to have been the bark of the *fau* tree. The bark was obtained from young shoots two inches or less in diameter and was prepared as follows: The stripped bark was soaked for several days in a taro patch or in the backwater of a stream, left until the membrane connecting the inner and outer bark had been destroyed and the outer layer had begun to decay. The inner bark was then separated, scraped, and soaked for two or three days in fresh running water. It was then spread out and dried in the sun. Almost every native household has a bundle of this dried bark, strips of which are used for all the purposes for which Europeans employ string. 283
[224]

True cordage was made from the dried bark by either twisting or plaiting. Heavy rope was twisted from two or usually three strands. In manufacture the direction of rotation was the same as in European rope. In order to make the rope smooth and of uniform diameter, the bark was cut in lengths of two or three feet which were worked in gradually as the twisting progressed. The finished product was somewhat softer and more flexible than a hemp rope and when new was almost equally strong, but it did not wear as well as hemp. Twisted bark rope is still manufactured to a limited extent. The heaviest made is about one inch in diameter. In ancient times much larger ropes were made, but no examples seem to have survived. Light cords and small strings were made by rolling the bark on the thigh.

Small ropes and heavy cords were usually plaited, the bark being prepared as in rope twisting except that it was not cut into short lengths.

The strands were first loosely knotted together and held by the toes until enough cord had been braided to permit of attachment to a tree or post. The plaiting was then done in the ordinary European direction, that is, toward the workman. In cords ending in a flat loop the body of the cord was frequently twisted and the loop plaited. Three, four, six, seven, and eight strand plaits were used, but only the three and four strand plaits, called respectively *tona* and *fofii*, were used for ordinary cordage.

Rope of seven strands was used for certain ceremonial purposes (32). The six and eight strand plaits form flat bands, and are still used for the leg ends of pig tethers. (See Pl. LXV, A.) Although most of the natives are familiar with these techniques, none of the informants questioned were able to give a name for them. [23]

Practically all *fau* bark cordage was utilitarian, although slender black cord of this material was used with other material in a few ornaments. In the feather headdress (*paekua*) it was plaited with tapa cord to form a black and white edging. The cords of the large fish net (*upena*) were dyed red with earth [292]

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Memoirs Bernice P. Bishop Museum

283 The cords of the large fish net (*ti ene*) were dyed red with earth
 [386] called *ka'aca* which was worked into them in the course of the rolling, but apparently there was no decorative intent. Colors other than red and black do not seem to have been used. The method in dyeing the cord black was not ascertained, but it was probably the same as that used in dyeing sennit black.

[824] Next to the fau bark the material in most common use is coconut fiber. This fiber is of two kinds, that from the husk, which is short and rather stiff, and that from the leaf sheath, which is longer and more flexible, but lacks the strength of the husk fiber. Husk fiber is used for all ordinary cordage and is obtained by beating fresh moist coconut husks with stones until the tissues have been crushed and the fibers can be separated by hand. In the leaf sheath the fibers are arranged in thin layers which can easily be separated with the fingers. Sheath fiber is said to have been employed for the large nets used in turtle fishing, and for the lashings of some chiefs' houses and sacred structures. [227]
 [534] It was also occasionally used for the thin cord employed in *pavahina* and as strings for musical bows.

The heavier grades of coconut fiber cord are usually plaited, but the smallest cord is twisted from two strands while a somewhat heavier twisted cord, in a single strand, is used in one form of ornamental plaiting. Ordinary cord (Pl. LXV, D 1) was made by plaiting three untwisted strands of fiber, additional fibers being worked in as the plaiting progressed to keep the strands of uniform size.

The plaiter seated himself and, holding the end of the cord with his toes, plaited upward and away from the body. The ornamental cords used for *hue* nets and drum lashings were plaited from many strands—five, six, eight, and from nine to fifteen inclusive. They appear to have been always in the form of flat ribbons, and it is rather curious that no square four-strand coconut fiber plaits were seen although this technique was employed for some bark ropes.

Two forms of plaiting were used, one of which gave a broad thin band having the appearance of twilled fabric (Pl. LXV, D, 3), while in the other the strands ran in diagonally to the center of the band, where they passed alternately over and under (Pl. LXV, D, 2). The ends of cords made by the first technique were usually finished by short sections made by the second. In large cords made by the second technique two longitudinal strands of twisted fiber were usually used as a base, the strands of the plait passing alternately over and under these in a sort of figure eight motion. In well made cords of this type the base strands were completely covered, and the finished product gave the effect of being made from two cords tightly twisted in opposite directions and placed side by side. Many strand cords made by plaiting together elements which were themselves plaited do not appear to have been used.

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Finished three plait cord is stored in long cylindrical rolls wound to give ²⁸³ an ornamental effect. Many strand cord on the other hand is said to have been commonly wound in thin flat rolls like European tape. (See Pl. LXV, B.)

The only dyed coconut fiber cord collected was of the three strand ²⁸³ variety, but it is probable that the more intricate plaits were also occasionally colored. ³⁸⁶ All the specimens seen were reddish brown, tan or black, but red is mentioned in native stories and Stewart, a reliable authority, speaks of yellow and white sennit used in house lashings. The reddish brown and tan sennit appears to be natural. The Tongan method of deepening the color by baking, if originally known to the natives, has been forgotten. The lightest shade of tan sennit was made from fiber of the leaf sheath. Three methods of coloring the black sennit were described.

The bark of the *mai* tree was beaten up with stones and the juice squeezed into large wooden bowls. The finished sennit was then steeped in the juice for several days, until it became black. It was then removed and buried for three days in the mud of a taro patch, washed, and dried. A second method consisted of burying it in the mud for a longer period without the preliminary dyeing, while a third method consisted of rubbing the finished cord with a mixture of *ama* nut soot and water.

It seems probable that when mention is made to red sennit the darker shades of red brown are referred to, but at least some red sennit was made by painting the fiber, apparently after plaiting, with the seeds of the *arnotto* (*Bira orcllana*). Yellow sennit was colored with saffron, the cord probably being made from the light colored fiber of the leaf sheath. White sennit must, from the nature of the fiber, have been incrustated or painted rather than dyed, and it is quite possible that it was produced by rubbing the finished cord with a paste made from shell lime or from a fine white earth, extensive deposits of which occur in Nuku Hiva. This supposition is strengthened by the fact that fans were whitened in this way.

Although most Marquesan cordage was made from either *fau* bark or coco- ²⁸³ nut fiber a number of other fiber plants were known and used. The most important of these seems to have been the pineapple. Pineapple fiber is still used ⁸²⁴ for thread and for very small fish lines, and is prepared as follows:

The fresh green leaves are taken one by one, laid across a banana log, and scraped longitudinally with any sharp-edged instrument. The bowl of an ordinary metal spoon was seen used for this purpose. Continued scraping removes all the flesh of the leaf, leaving a few soft fibers which are then dried in the sun. The women convert these fibers into thread by rolling them upon the bare thigh with the palm of the hand. To make fish lines either two or three strands of this thread are twisted together, the finished line being passed rapidly through a flame to singe off the lint.

Banana fiber is said to have formerly been used for certain kinds of cord, but this material has not been employed for many years. To prepare the fiber,

283 banana stumps were beaten until the soft parts and fiber separated. The fiber
824 was cleaned, washed and dried, and then rolled into cord by the process just
described for pineapple fiber. The only remembered use of this cord was in
the making of *pche* or string figure.

Jardin (33, pp. 32-59) mentions the use of certain other fiber plants. No
accounts of these were obtained from the natives but the information appears
to be reliable. The species are: *pakoko* (*Phascolus amoenus*) of which Jardin
says (33), "The flower shoots are very flexible; the natives make from them
lines for catching fish;" *papa*, an unidentified legume, which, according to Jardin,
"serves like the *phascolus amoenus* for the making of threads;" and *pute* (*Pip-
turus propinquus*) of which the same author says, "The natives use its branches,
which are very flexible, to make large ropes."

Other materials, which can scarcely be classed as fiber, were *tapa*, and
a variety of long grass, unidentified, called by the natives *mauomatito ne
tctahia*. The *tapa* was sometimes twisted into strings for the suspension of
ornaments, but had so little tensile strength that it was usually reinforced with a
strand of coconut fiber about which the *tapa* was wound. Strips of grass are
said to have been plaited into cords which were used by girls in a game, but no
more exact information could be obtained.

284 A discussion of knots and splices belongs under the general head of cord-
177 age and fiber, but it is quite impossible to distinguish at the present time be-
tween native forms and those of European origin. The Marquesas became at
a very early time a regular port of call for whalers and a number of the natives
served and still serve as sailors on European ships. It is not surprising, there-
fore, that they soon acquired a knowledge of all the European knots and splices
and have for many years used them as skillfully as any white sailor.

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MATTING AND BASKETRY

MATS

The twin arts of matting and basketry appear to have been less developed in the Marquesas than in any other part of tropical Polynesia and both have been nearly destroyed by European contact. No mats of the better sort are now manufactured and the processes employed are unknown to most of the natives. Only three materials appear to have been used for mats, ti leaves, coconut fronds, and the leaves of the pandanus. Mats made from ti leaves were small crude affairs, hardly deserving the name. They were used only to line and cover *ma* pits. (See Pl. LXVI, A.) They were made as follows:

A quantity of the leaves were collected and the stems and heavy portion of the midrib removed, without breaking the inner surface of the leaf. These stemmed leaves were laid in bundles of three or four, the face of each leaf being against the back of the one below. These bundles were then placed side by side with a wide regular overlap, always from the same direction, and were pinned together with splints about two inches long made from the midrib of a coconut leaflet or from bamboo. Three of these splints were used to join each pair of bundles, one being placed in the middle and the other two near either end. In doing the work a long splint was used; a portion of the end of the splint was broken off each time and left as a pin. The resultant mat was as wide as the length of the leaves and could be extended indefinitely by pinning on new bundles.

Coconut mats are still regularly made in the Marquesas; the work is done by men and women indiscriminately. They are employed mainly as thatching for houses, to cover large earth oven and in ancient times they were used on beds, under the fine mats. The coconut mats are made as follows:

A coconut frond, usually that of a young tree, is split longitudinally and the midrib, to which the leaflets of either half are attached, is pared thin enough to be rather flexible. Alternate leaflets are then directed forward and backward and interwoven in a simple checkerwork. The outer edge of the mat is finished by braiding the tips of the leaflets together in a continuous longitudinal strip. The size of these mats naturally depends upon that of the frond from which they are made, ordinary specimens being 14 to 20 inches wide and 6 to 12 feet long. A common variation of this technique is to employ two half fronds placed side by side, the midribs being joined together by twisting a leaflet around both at intervals of one to two feet. The leaflets of both fronds are then interwoven to form a mat of single thickness like that just described. A still further variation consists in placing two half leaves together with the midribs at opposite edges and interweaving the leaflets in checkerwork. This last technique is rarely used at the present time.

The better Marquesan mats, used principally upon beds, were made from pandanus. These bed mats were as a rule long and comparatively narrow, being intended to cover the space between the two coconut logs. They were of two sorts, the distinction being apparently one of shape and use. The mats upon which the legs rested were called *moena*, those upon which the body rested *hahuaa*, those for the head *p'ai p'ai*. (For shape and arrangements of these mats

to friends, that she had gathered a few of the women together and was teaching them to weave coarse mats. This statement is so remarkable, implying as it does an ignorance of the art, that it is difficult to account for unless mat weaving, like certain other industries, had become more or less localized so that the valley in which the missionaries settled bought its mats ready made. 285

BASKETS

The manufacture of all but the simplest baskets had been discontinued in the Marquesas in 1920 and only two types of basket were remembered by the informants questioned. Both of these were made from coconut fronds. The simplest type *koaho* (Pl. LXVI, D) is still manufactured, and is made as follows: [024]

Four short sections of coconut midrib, to each of which three leaflets are attached, are placed two at either end of the proposed basket and the leaflets interwoven in checkerwork to form the broad, oval bottom. Four similar sections, bearing two or three leaflets each, are then placed in pairs above the first four and their leaflets interwoven with the ends of those forming the bottom, making the sides. Three of the bottom leaflets are left projecting beyond the basket at either end and these are braided and the braid carried up over the outside of the basket to the rim. The rim is finished like the edge of an ordinary mat. When the body of the basket is finished, a bunch of tips project from either end. The braids from the bottom are combined with these tips and the whole plaited into a broad flat cord. The cords from the two ends are tied together above the center of the basket to form a handle, and the receptacle is ready for use. Baskets of this sort can be made in a few minutes. They are used principally for carrying fruit.

The more elaborate type of coconut basket called *hakete* (Pl. LXVI, E) is no longer regularly manufactured; the specimen figured was made to order by an old woman who remembered the process:

Young fronds, just beginning to unfold were used and the two sides of each leaflet were folded together before weaving so that the midrib lay along one edge of the strip. The basket was made as follows: The frond was taken and prepared as for mat weaving. Sections 3 to 5 feet long, depending on the size of the desired basket, were then cut from the corresponding portions of the two halves, and the leaflets of each section interwoven tightly at the base, each leaflet passing over two in the direction of its natural angle with the midrib. All the leaflets of each section thus ran in the same direction. The midribs of the two sections were then placed together in such a way that the leaflets of one ran at right angles to the leaflets of the other and were bent into a long oval, their ends being tied together with short pieces of bark string. This formed the rim of the basket. The leaflets of the two sections were then interwoven in a twilled pattern, over three and under three, those of one section forming the warp and those of the other section the weft. This weaving was continued down to the juncture of the bottom with the sides, where there was a narrow strip twilled over two and under two. The bottom, which was very narrow, was made in two thicknesses. The inner layer was formed by interweaving the warp strips of the two sides in a simple checkerwork, their tips being bent back and plaited together in a long strip beneath the checkerwork. The outer layer of the bottom was formed by bringing the weft strips of the two sides together along the middle of the bottom and there plaiting them into a flat braid. The braids from both the inner and outer layers were concealed between the two sections of the double bottom, but their tips projected upward, one at either end, on the inside of the basket. No handle was made, the basket being suspended by cords passed under the rim at either end. Baskets of this sort were used principally for carrying fish.

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to a great distance. At certain distances from their points they are pierced with holes all around, in order that they may break off, with their own weight, on entering the body, and thus be more difficult to extract." 411

Desgraz (15. pp. 282-3) mentions a toothed javelin intended to break off in the wound, but the reference is obscure.

There are a few early mentions of lances of *toa* wood used in hand-to-hand fighting, but none of these are explicit enough to merit quotation. Fleurieu (23, p. 132) says that these lances were 9 to 11 feet long. Porter (49, p. 86), that they were 14 feet long. Some of these weapons are said to have been toothed, others plain. A curious form of lance, described by a native informant, 824



FIGURE 10.—Outline of Marquesan spear.—Drawn by Willowdean C. Handy.

had upon one side three long barbs, cut in one piece with the shaft, which were deeply notched at the base. When an antagonist had been stabbed, the foremost barb would be broken off by a quick twist and left in the wound while the spear, when withdrawn, would still serve for a second and third thrust.

Edge Partington (20, First series, Plate 43) figures two Marquesan spears of unusual form. In these weapons the shaft is made of "a hard red wood" and the heads of a "dark hard wood." The dark wood is almost certainly *toa*.

The shaft of the spear thickens toward the head. The point appears from the drawing to be inserted in a hole in the end of the shaft. There are no indications of lashings or other attachments. The points are rather slender in proportion to the shaft, and are carved with a series of low barbs. In one example the barbs alternate on opposite sides, in the other they are placed in pairs.

Spears with detachable heads, and many pointed spears appear to have been used primarily in fishing. (See p. 397.) 221

CLUBS

Two varieties of club were used in the Marquesas, one of which, the *uu* (Pl. LXIX, D) is a fairly common object in collections. The *uu*, which have frequently been figured and described, show great uniformity in shape and decoration and only minor differences in size and weight. An average specimen has a length of 4 feet, 6 inches with a head 18 inches long.

The handle of the club is round or oval in cross section, with a diameter of about 1 3/4 inches and a slight lateral flare at the butt. At its upper end the handle gradually flattens and expands laterally to form a peculiarly shaped head of two distinct parts. The lower part is oval in cross section, with sharp edges; at the outer end the head thickens abruptly, having a thickness of 3 1/4 inches at the tip. Near the top of the sharp edged part there are two lateral knobs, each diamond shaped in cross section, with a flat end. The heads of clubs of this 411 531

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APPARATUS USED IN FISHING

The Marquesans used four methods of fishing; poisoning, spearing, hook and line fishing, and net fishing. The first of these methods was by far the simplest, but owing to the rugged nature of the coast there were few places in which it could be profitably employed. Three substances were used; the fruit of *Barringtonia speciosa*, the flowers of *Tephrosia piscatoria*, and the leaves and young shoots of *Rhyncosia punctata*. (The use of *Rhyncosia punctata* may be post-European.) The use of the *Barringtonia* appears to have been limited to small pools in the rock; the fruit was split with a flake knife and rubbed on the rocky sides of the pool, stupefying the fish and causing them to rise to the surface. The *Tephrosia* and *Rhyncosia* were used for deep fishing. Holes or small caves among the rocks were located by diving. A quantity of the crushed poison was enclosed in leaves, forming a tight bundle, and with this the fisherman dived, shaking the poison out into the caves. He then returned to the surface and waited for the stupefied fish to rise. [B24]

FISH SPEARS

Large fish, especially the giant ray (*fafaa*) were speared from canoes. The spear was provided with a detachable head to which a line was attached. The head was made of hard wood or bone, its upper end was cut with a jog which rested against a corresponding jog on the end of the shaft, and was attached to the shaft by light lashings. The form of this head can be seen from the accompanying photograph of a specimen in the United States National Museum (Pl. LXX, C), although the carved decoration is unusual. 226 278

Smaller fish were speared from the rocks with a many-pronged spear. Only a general description of this implement was obtained, but one form called *mato'ou* (Handy) is said to have had twelve prongs attached to the shaft by three rows of sennit binding. The natives also swam after certain species of fish and speared them in the water, a practice still common in the Society Islands and the Tuamotus.

The spearing of fish from the rocks, and most of the net and hook fishing, were carried on at night by the light of torches. These torches were of three sorts; those made of sugar cane (now obsolete), of bamboo and of coconut fronds. 226 373 [B24]

The sugar cane torches are said to have been made by tying up the leaves of a dry stalk into a compact bundle. Coconut torches were made from a single dry palm frond. Beginning at the tip, the leaflets were directed upward and tied by passing single leaflets around the bundle at intervals of a foot or more. Such a torch when lit at the tip needed no tending, and would burn down gradually with a good light. Bamboo torches were made by crushing a long dry joint of bamboo, care being taken not to break it across. The scattered fibers held the bunch of dry strips together without additional binding. This form is the one most used at present for night fishing from canoes.

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MUSICAL INSTRUMENTS

DRUMS

In musical ability the Marquesans appear to have been inferior to the ⁵³⁴Tabitians and the Hawaiians, but they possessed a number of musical instruments, the most important of which were drums (Pl. LXXII, A). That these were made in a variety of forms and sizes is indicated by the following terms from Dordillon's Dictionary¹:

Pahu.	Drum.	[192]
Pahu peiei.	Small drum.	
Pahu ua.	Double drum.	
Pahu me'ae.	Large drums used in the me'ae.	
Pahu putuu.	Short drum.	
Pahu ooeo.	Small drum used to accompany songs.	
Pahu tapete.	Long narrow drum.	
Umi.	Drum.	
Teveve.	Drum.	
Pere.	Kind of small drum.	
Uhaki.	Small drum played with the uhaki.	
Pahu vanana.	A thin drum, perhaps six feet high, made of ton wood; it was beaten as an accompaniment for the singing of the <i>vanans</i> by the men in the me'ae.	
Utu.	A small drum used at feasts.	
Pahu umi.	A small drum.	
Tutu.	Small drums played on the <i>tahua</i> .	
Pahu anana.	Big drums beaten from a <i>paepae</i> .	

Unfortunately several of the drums in this list can no longer be identified. The *pahu ua* must have constituted a distinct type, but no information in regard to it was obtained and no examples seem to have survived. Except for the *pahu ua*, all the Marquesan drums figured or preserved conform so closely to a single type of design and construction that it seems probable that they differed only in size and in minor details. They may be described as follows:

The smallest drum seen was slightly more than thirteen inches high with a head diameter of six inches. The largest, a *pahu me'ae*, had lost its base through decay, but must originally have been more than eight feet high with a rim diameter of nineteen inches. The bases of even the largest drums seem to have been comparatively low, the differences in height resulting from variations in the length of the body.

All drums were hewn from a single piece of wood. Some very large drums were apparently made from *temanu*, but the decay of the wood made identification difficult. Drums of ordinary size appear to have been uniformly made of *mio*; and as only the dark heart wood was used, very large trees must have been required. The body of the drum was shaped with adzes and the interior hollowed with chisel and mallet. Fire does not seem to have been used. [822] [824]

The body of the Marquesan drum was cylindrical. In drums of ordinary size the diameter was slightly greater at the bottom than at the top, but in the very large temple drums

¹ Translation and explanatory notes by E. S. Craighill Handy.

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CLOTHING AND ORNAMENTS

The climate of the Marquesas is such that clothing is unnecessary as a 291
protection from the cold. The original native dress was a scant costume of
tapa. Mats seem also to have been worn but their use was exceptional. The
only mention of this custom is by Krusenstern (34, p. 156) who, speaking of
the people of Nuku Hiva, says,

Mats are sometimes used among them, and the king's son-in-law, though indeed he was
the only person, always came to the ship in one of a very coarse kind, and fastened under the
chin in such a manner as to merely cover the back.

In Hiva Oa the natives seem to have no memory of the use of mats as 704
clothing and in view of the tapu which existed on that island against the use
by men of mats other than those made of coconut, it seems doubtful that they
ever were worn. This tapu was so strong that in former times straw hats
which were considered a kind of mat could not be placed on the head without
sacrilege.

TAPA

Tapa was made from the bark of several different trees. The most im- 287
portant is the *ute* or paper mulberry (*Broussonetia papyrifera* or *Morus papy-* 824
rifera) which yielded a soft white tapa. An inferior greyish tapa was made
from the bark of the breadfruit tree, and a strong, mahogany colored tapa, much
used in ceremonial costumes, was made from the bark of a species of banyan
(*Ficus Sp.*). Jardin (33, pp. 32-59) says that the bark of the *mio* (*Thespesia*
populnea) and the *katea* (*Alyxia*) were also used to a small extent.

The paper mulberry was essentially a cultivated plant, and was probably
introduced by the early settlers. It was planted in fenced enclosures and care-
fully tended. The breadfruit and banyan do not seem to have been grown
specially for tapa making, the bark being obtained from shoots and small
limbs. A special form of *ute* tapa, made from the bark of an old tree, was
worn as part of a priest's ceremonial costume.

IMPLEMENTS USED IN MAKING TAPA

The implements used by the Marquesans in making tapa were scrapers, 287
beaters and anvils. 413

SCRAPERS

The scrapers used in the manufacture of tapa were made from pearl
shells, rarely more than four inches across, whose edges were ground sharp.
In some scrapers the irregularities of the hinge were also ground away to make
the implement more convenient to hold, but the natural outlines of the shell
seem always to have been retained. They must have formerly been very numer-

[151]

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Pani was used only on the hair, the body being anointed with *pao panu*, 302
coconut oil scented with sandalwood.

BODY PAINTING

Persons of both sexes painted the entire body yellow, but the use of other 302
colors, or of painted designs, seems to have been unknown. The principal source 306
of the pigment was the root of the turmeric which was cultivated for this pur- 824
pose. In Hiva Oa this is called *ena*, but Dordillon gives the word *kotohi*, which he [249]
translates as "root of turmeric which is planted." The turmeric root was dried,
grated, and mixed with coconut oil to form the paint. The natives still stain their
faces and hands with the fresh root as a protection against insects. Several other
plants seem to have been used for body painting, all of which yielded a yellow dye.
Langsdorff (38, p. 114) also says that in Nuku Hiva both sexes painted them-
selves with the sap of *Thespesia populnea* mixed with coconut oil. Jardin (33,
pp. 32-59) says that the juice of *Sinapis nigra* was used to stain the body. He also
says that a much prized yellow dye, used for both body painting and tapa dyeing,
was obtained from a species of *anumum* (*Curcuma longa*) which grew in a
single locality—a place called Muake in the interior of Nuku Hiva. The roots of
this plant were prepared by a secret process and the dye was sold in powdered
form. The name which Jardin gives for this plant, *eka*, is the Nuku Hivan equiv-
alent of the Hiva Oan word *ena*, but it seems certain that the *eka* root of Nuku
Hiva was not the turmeric (*ena*). It was probably this substance which was an
article of trade in ancient times, and which was so highly prized by the natives of
Hiva Oa that they sent two large canoes to Nuku Hiva in exchange for it.

SKIN BLEACHING

White skin was greatly admired by the Marquesans, and it is mentioned as 302
a beauty feature in some of their legends. They had discovered a process for tem-
porarily bleaching the skin, so that immediately after treatment they were almost
as light as southern Europeans. The earliest account of the process is given by
Langsdorff (38 pp. 113-114), who says:

The manner in which it [bleaching] is done is to rub the whole body with sap extracted
from the leaves of three different plants called here *epapha*, *hoko-kuh* and *ohuc*. The skin be- [824]
comes at first entirely black, and for four or five days the person undergoing the operation
cannot leave the house; they then wash themselves well with fresh water which takes off the
black sap and leaves the skin its natural, nearly white color.

The account obtained by Handy differs somewhat from this. The body, and
especially the face, was first painted with *ena* and coconut oil. Over this was
smeared the juice from the crushed leaves of the *kokuh* tree or *papa* vine. This
gave the skin a green color. The person undergoing the operation stayed in the

ORNAMENTS

301 The Marquesans compensated for their simple costumes by the use of a great variety of ornaments, ranging from quickly made necklaces and wreaths of ferns and flowers to elaborate headdresses whose manufacture must have required months of work. Certain ornaments were worn exclusively by men or by women, but it is an interesting commentary on the position of the women that many of the most valuable could be worn by either sex. There are some indications of local differences in ornaments, but these are hard to establish at the present time.

FLOWERS, HERBS AND FRUITS

301 A great variety of wreaths and garlands, made from ferns and from all
824 sorts of flowers and fragrant herbs, were formerly worn by the Marquesans. This sort of decoration is now limited to wreaths worn on the hair or around the hat.

Most of these wreaths are made from plants chosen for their odor rather than their beauty. The finest are made from *Guttarda speciosa* which bears a creamy yellow tubular flower of wonderful fragrance. The calyxes of the flowers are broken off and the tubes threaded upon a string, the base of one flower entering the mouth of the next. The flowers have a peculiar property of increasing in fragrance as they wither and even when dried have a pungent perfume. At the present time the flowers of *Gardonia tahitensis* are much used for wreaths, although this plant is not native to the Marquesas. The calyxes are broken off, but are left suspended by the pistil. The corollas are then threaded. The finished wreath is a white band from which hangs a fringe of bright green calyxes.

A necklace made from the fragrant ripe fruit of pandanus [*Pandanus odoratissimus*] was formerly a favorite ornament of both men and women.

The fruit looks somewhat like small sweet peppers, with shiny surfaces, bright red at the upper end, shading to lemon yellow at the tip. They were pierced laterally and strung side by side, small ends up, so that they formed a heavy semicircular collar two to three inches wide in the center, tapering toward either end. These ornaments are especially interesting because of their resemblance to a form of wooden gorget. (See p. 429.)

ORNAMENTS MADE OF HAIR

301 Ornaments made from locks of human hair attached to a band of coconut fiber are highly characteristic of the Marquesan culture; nothing at all resembling them seems to have been used elsewhere in Oceania. Although these ornaments vary in size according to the part of the body on which they were to be worn, the technique is always the same.

The band to which the locks were attached was composed of a number of strands of twisted coconut fiber, which were plaited around two heavy longitudinal cords. The method of plaiting was such that at first glance the band seemed to consist of two half-inch ropes, tightly twisted in opposite directions, and fastened side by side. (See Pl. LXXVI, A.) The hair was made up into a number of small locks which were attached to the

301 was made by wrapping the lower ends of the feathers with sennit or inserting
237 them in a short bone cylinder. A sennit loop attached to the ornament was
slipped over the finger. (See Pl. LXXVI, C.) Dordillon translates the word *kihi*
as "ornament of white beak for the fingers." True finger rings seem to have
been unknown in ancient times.

BRACELETS AND ARM ORNAMENTS

301 The Marquesan shell bracelets are of considerable interest in view of the
wide distribution of such ornaments in Melanesia and their comparative rarity
[321] in Polynesia. Two examples are shown on Plate LXXVI, B. The broader of
these is made from the end of a large *Conus* shell of some sort and is rather
crudely finished. The narrower has apparently been ground from *Tridacna*
shell, and is unusually well made. As *Tridacna* shells of suitable size are lack-
ing or at least very rare in the Marquesas it seems probable that this bracelet was
an importation.

In the Peabody Museum at Salem are some very interesting wrist orna-
ments which were collected during the early nineteenth century. They are of
types which have been forgotten by the present natives and the locality in which
they were obtained is unknown. Two of these ornaments (Pl. LXXVI, F) are
made from large blue black seeds, about the size of a small grape, which are
attached to a band of plaited coconut fiber identical with that used for hair orna-
ments. Each seed is punctured at the stem end and attached to a cord of twisted
fiber, which is held in place by a small wooden plug. The other ends of these
cords are plaited into the band.

● 324 A still more showy wrist ornament is composed of strings of *Abrus pre-*
cartorius seeds. The fiber base is like that used in the ornaments just described,
but the seeds are pierced and strung on loops of fine cord whose ends are woven
into the band. (Pl. LXXVI, G.)

NECKLACES

Necklaces made of a great number of strands of braided human hair were
formerly worn by men in the Marquesas. These necklaces, called by Dordillon
takiouoho, are rare, but there is a very fine specimen in the Peabody Museum at
Cambridge and four less perfect ones are in the Peabody Museum at Salem.
(See Pl. LXXVII, 1, A.) In one specimen (2) the strands of hair seem to have
run around the neck continuously; in the others the strands were made into a
thick bundle with the ends wrapped with many turns of fine sennit or human
hair string. One end of specimen No. 1 is wrapped in such a way that it forms
a compact blunt point and the other end is finished with a sort of corrugated
cylinder large enough to admit this point. When worn, the pointed end was evi-

301 orated, with a series of closely spaced notches which in one specimen (Pl. LXXVIII, B) gives
 321 the edge of the shell a toothed appearance. Along the upper margin two or more holes for suspension were made. Shell plaques of this sort seem to have been intended primarily for wear with the necklaces of plaited hair.

Plaques ground from the large end of a species of *Conus* shell were also used as breast ornaments, but they seem to have been much less common than those of pearl shell.

These plaques were smoothly ground on both sides, the marks of the whorls being almost obliterated. A hole for suspension was drilled near one edge; a few plaques have two holes, drilled opposite each other. These plaques appear to have been worn suspended from necklaces, but no complete specimens were seen. Their occurrence in the Marquesas is of considerable ethnological interest as such ornaments are rare or lacking in other parts of Polynesia but are highly developed in Micronesia.

301 Two curious objects of featherwork, one in the Peabody Museum at Salem,
 327 the other in the Peabody Museum at Cambridge, are probably to be classed as gorgets. (See Pl. LXXXVIII, C, 1.)

These gorgets are made from glossy black cocks' feathers cut to length, those on the upper edge being quite short and those on the lower edge measuring three inches or more. The feathers are laid on in regular overlapping tiers, beginning at one end of the crescent. The exact method of attachment could not be determined, but the feathers seem to have been pasted to a pad of tapa or other soft material in rows and further reinforced by single strands of banana fiber wrapped around the base of each row. The suspension cords are of plaited fau bark. The attachment of the cord at one end is covered by the natural slope of the feathers; the other end is concealed by a sleeve of fine sennit decorated with human hair cord applied in a wrap weave. At the bottom of this sleeve are traces of a band of green and yellow feathers. The dimensions are: length across tips, $9\frac{1}{2}$ inches; maximum width, $2\frac{3}{4}$ inches; thickness, $1\frac{1}{4}$ inches.

301 An ornament of large seeds, now in the Peabody Museum at Cambridge,
 should probably be classed as a gorget, although its construction suggests that of the hair ornaments. The seeds are black and as large as grapes. They are perforated at the stem end and attached to cords of twisted coconut fiber by the method used for seed armlets. They differ, however, in having two seeds attached side by side to the end of each strand. These strands are attached to a band identical with that used in hair ornaments. To either end of this band are fastened long cords of twisted fau bark.

The most characteristic of the Marquesan breast ornaments are the large collars, or gorgets, made from light wood and encrusted with the seeds of the
 [824] *Abrus precatorius*. One of relatively simple form is shown on Plate LXXVIII, C, 2. The base of this ornament is a crescent of soft light wood, cut in a single piece. One side of this crescent was coated with soft breadfruit gum, then covered with the shiny red and black *Abrus* seeds. Along either side of the encrusted space are glued flat ribbons plaited from strings of white tapa and blackened fau bark. The ends of these ribbons are plaited together to form the

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433

ornament of this sort, now in the Peabody Museum of Salem, is shown on Plate LXXX, A, 2. 222
237

The ornament consists of two feathered bands, of identical construction, placed side by side and fastened together by wrappings of sennit at intervals of three or four inches. The ends of the bands are enclosed in a longer wrapping; each band consists of a heavy core of twisted coconut fiber over which there is a continuous sennit wrapping. The plumes are closely spaced and have been laid on with their quills against the core, each quill being held in place by two or three turns of the wrapping. Great care was taken to place the plumes so that their natural curve caused those on each half of the band to incline outward and away from the center. Heavy sennit cords, probably a continuation of the fiber in the cores of the bands, spring from either end of the ornament. Other cords of *fau* bark are attached to the ends of the sennit cords.

The *taoraha* was worn across the forward part of the head, a little back of the forehead, with the plumes rising vertically. The cords at its ends were tied under the chin, like bonnet strings. It was primarily a man's ornament, but was sometimes worn by women dancers at fetes.

Gracia (28, p. 134) says that about 500 feathers were required for a *taoraha*, and that each cock had only two feathers which would serve, so that it was necessary to despoil over 200 cocks to make a single ornament. At the time of his visit a *taoraha* was valued at a gun.

A modified form of the *taoraha* is shown on Plate LXXX, A, 1. The bands which form the base of this ornament are like those in the one just described, but the workmanship is not so good. The feathers are much shorter and appear to be cocks' tail coverts. They are made up in small bunches of three to five feathers each, with the quill ends enclosed in short sennit wrappings. The bunches are attached to the cores of the bands by a method resembling that used in attaching the small locks of hair in hair ornaments.

Stewart (59, pp. 247-249) describes still another modification of the *taoraha*. He says:

It [the headdress] consists of a crescent three or four inches broad at its greatest breadth, fixed uprightly in front, the lower edge following the line of the hair on the forehead, and the points terminating at each temple immediately above the ears. A neat border, an eighth of an inch wide, ran around the edges in a herring bone pattern of alternate black and white—while the middle was entirely filled with the small scarlet berries of the *Abrus precatorius*, fastened upon the material of which it was constructed by a gum which exudes from the breadfruit tree. [Compare this description with the gorget (?) shown on Pl. LXXVIII, C, 2.] The crescent formed the front of a cap, fitting closely to the head behind, and the foundation in which the heavy plumage surmounting it is fixed. This plumage consisted of the long black and burnished tail feathers of the cock—the finest I ever saw; those in the center being more than two feet in length. They were arranged behind the front piece as closely as possible, and in such a manner, as to form the shape of a deeply pointed chapeau, placed crosswise on the head—the feathers in the center standing perpendicular, and becoming more and more vertical, till the lowest at the edges drooped deeply over the shoulders. The ends—falling, from the highest point above the forehead, one over another in a regularly defined curve on either side—played in the air with the gracefulness of an ostrich plume, and imparted to the whole an appearance of richness and taste we had not been led to expect from any of the decorations of the country previously seen. [824]

According to Handy a headdress made from the white feathers of the *zaki* bird was also called *taoraha*.

Gracia (28, p. 134) says: "Oftentimes a bunch of other more curious feathers of sea birds, in the form of a plume, are worn at the top or back of the

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[533] Chants for women do not seem to be general. At some time during the operation, the *opou* was given a new name, referred to as *patiki*. This was taken from some personal defect of his own, such as a blind eye, for example, or from some imaginary peculiarity of the genital organs of his father or mother.

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752 The operation, as may be imagined, was extremely painful and the patient cried and screamed without restraint. Berchon notes that after each sitting, there were from eight to twelve days of local inflammation, followed by fever and sometimes swellings, which were at times fatal. Light inflammation and swelling and ulcers lasting for several days (6, p. 132; 11, p. 110; 10, p. 118) seem to have been usually the most serious results of the rigorous treatment. The juice of the banana stem was used as an ointment (*paku*) to hasten healing. Berchon says an emollient of hibiscus leaves was applied to relieve the inflammation.

³⁰⁴ The duration of the operation depended largely upon the fortitude and health of the patient. A Nuku Hiva man is reported to have been completely covered in three days; the legs and back of one man of Hanamenu were done in seven days; but as a rule the designs were put on in more leisurely fashion, a section of the body being covered at a sitting, with three-day rest periods called days of blood (*a toto*) after each, so that the operation covered from two weeks to four months. Under such conditions a woman's lips and shoulder might be decorated in a day, a man's legs from knees to ankles, or perhaps his thighs and buttocks. Langsdorff says that the first sitting usually lasted from three to four weeks and that only the groundwork of the principal figures upon the breast, arms, back, and thighs, was laid the first year, additions, however, being made for years at intervals of from three to six months.

[824
778] After the operation, fruits of noni (*Morinda citrifolia*) the most usual healing agent, were offered at the *me'ae* or sacred place; the *tuhuna* was paid; and, when the *tapu* was lifted, the sacred *oho'au tiki* was burned (though not the common house of women); and all those participating in the operation, who had not been allowed to bathe during the entire time, now went first to the sea to bathe, afterwards to the river. This accomplished, they covered themselves with fragrant ointment, which turned the skin yellow so that their new patterns showed brilliantly. Meanwhile, relatives had prepared such ornaments as tortoise-shell crowns, girdles of tapa, feather head ornaments, earrings, and the like. These they left outside their houses on the night before the festival (*Ko'ina tuhi tiki*; *Ko'ina*, feast; *tuhi*, show; *tiki*, design), which was always given to celebrate the completion of the work, and the newly decorated girls and boys donned them before their appearance on the paved floor of the

/9 cont. /

known, however, the most popular consisted of grated unripe pineapple. This had to be eaten for three days before the abortion would begin. During the period of labor and after, a hot stone or bottle full of hot water is placed on the stomach to ease the pain. It is stated that this medicinal preparation is only efficient during the first three months of gestation. No references to mechanically induced abortions were ever noted.

No rigid tapu surround the pregnant woman, although it is certain that such existed in the past, particularly in regard to food. A commonly kept custom at present is that of the avoidance of salty foods which are believed to cause mouth sores and "cradle cap" on infants (mate kea).

Cravings are common among Marquesan women during pregnancy. Particularly popular are shellfish varieties normally eaten as supplements to main diet items, such as chitons (mama) and patellas (titi). Other items often requested are lobsters (u'ua tai), shrimp (u'ua vai) and a delicacy made of putrid sting ray flesh (ha ha'ua).

Intercourse does not cease during pregnancy until the last few weeks, if at all. Usually the husband becomes dissatisfied with the unwieldy stomach of his wife and attempts to find some gratification elsewhere. /10/ Some joking about intercourse during pregnancy occurs, with statements being made that one must indulge to "make the baby strong" or "to feed the baby."

In labor (ha'a totohi i te tama) no efforts are made to ease the pains (tua toto). Women usually retire when pain begins, remaining secluded until delivery. At present, administrative edicts require the presence of all expectant mothers at the Taiohae dispensary 6 weeks prior to the estimated date of delivery. If the women follow these directives, they merely report to the hospital upon the first sign of pain. However, many prefer to bear the children at home, as the trip is often the cause of premature delivery, and the 6 week sojourn in Taiohae is only possible for those who possess relatively well-to-do relatives.

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take care that the afterbirth is buried well out of reach of the pigs and dogs, beneath a pile of rocks. [178] 844

/12/ The portion of the umbilical cord attached to the umbilicus is tied up with a medicinal compound (mea pa ku) consisting of the leaves of the papa (*Phaseolus amoenus*?). After three days, the cord should dry and fall off. Another medicinal preparation for the drying of the umbilical stump is powdered grey tufa or powdered, stiff volcanic clays found in various areas of the islands. This powder is sprinkled on to absorb the moisture from the cord. After the cord falls off an astringent preparation is placed on the umbilicus, made of leaves of ka ka'ahue (*Diellia brownii* E. Brown). This preparation is believed to have a beneficial effect if applied to the entire body of the child. It should be noted at this point that Marquesan native medicine, as it exists today, makes use of a large number of astringents for a variety of purposes. [824] 846 757

After childbirth, it was formerly the custom for the husband and wife to proceed immediately to a stream and there indulge in intercourse. This was believed to be of therapeutic value in producing a good flow of blood and fluids, and in aiding the internal organs of the mother to return to normal condition. Elderly women who have practiced this are positively in favor of it, declaring that it is unfortunate that girls are not maintaining the custom at present. The custom, still widespread in the 1920's, apparently became rare by the 1930's. Some individuals may still observe it in the southern archipelago. Although this custom is practically, if not completely, extinct, there is still routinely very little time elapsed between the birth of the child and the resumption of normal sexual relations. /13/ A period of one to two weeks appears to be about average, especially if one desires to procreate again, as it is believed that conception is easiest within a month or so after birth. [842] 846 757 178 [833]

The woman must not attempt to rub her perineum (ti 'a) if it is painful as a result of birth. For the first few days after birth it is necessary to eat nothing but fermented breadfruit paste (ma), heated by dropping hot cooking stones (ke'a umu) into it. This is to be eaten three times a day. If the sclera of the eyes [157] 846 [826] 757

/13 cont./

(kiko mata) are not white, this is symptomatic of an unhealthy condition, for which a specific (pa'a'u -- unidentified species) is recommended. 846
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It is especially important for the mother to avoid the use of salt, as in the prenatal period, as its use will result in the infant being afflicted with mouth sores and "cradle-cap" (mate kea). Should this occur, a remedy consisting of the leaves of the kenae tree (*Erythrina indica*) is mixed in the fermented breadfruit paste before it is heated for the mother's consumption. [753]
[824]●

The flow of lochia (vai kua) is believed to stop after a week or so with the restoration of the internal organs (e ti 'a hou). Should the perineum not heal, however, it is symptomatic of the retention by the woman of portions of the afterbirth, etc., known as kau tama (literally: baby debris) which must be passed before recovery is possible. To induce the passing of this harmful material, the leaves of the unidentified pa'a'u plant are again utilized, to be crushed and taken internally. Leaves of the *Phaseolus* are used in the same fashion for chronic /14/ complaints after birth. [824]

After birth, the child is fed on a little gruel of thinned breadfruit paste, crushed cooked shrimp juice, or both. In the past, special stone pestles were prepared for the crushing of shrimp, for the infant's first meal. Stimulating the flow of colostrum (vai ha 'ama) by nursing is thought to aid in the evacuation of all harmful substances which may reside in the mother's body after birth. Once the flow of milk (vai 'u) begins, the supplement of gruel is dispensed with. At present many parents use canned milk for the infant in place of gruel and even sugared water is used as a supplement. In such cases, the milk is prepared in any small bottle (usually a Perrier water bottle) and fitted with a store-bought nipple. 844
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Once the child begins nursing he continues to be fed, on demand, until the age of 2 to 3 years. In one case, weaning did not occur until 4 years of age. Nursing by women other than the physiological mother is common. Aunts of the child (paternal, maternal or both) are often wet nurses. These [178]

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of the girls. It is often the grandmother who administers the vaginal astringent to a young girl, further instructing her in techniques of intercourse and more general matters of sexual behavior.

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One of the major themes in Marquesan society is that of bodily cleanliness. Bathing is quite frequent as sensitivity to body odor and dirt is extreme. Beside bathing, a large number of cosmetics are used to suppress any odor that might arise. Foremost is the native pani, or coconut oil, which is scented with a variety of flowers and oil of sandal wood. Flowers themselves are also used, most important being /26/ the tia'e (Gardenia tahitiensis). Frangipani (tipanie'e) are the flower of the dead in the Marquesas, and therefore are never used for adornment. Besides these, there are store-bought perfume and hair pomade, the most popular of which is Yardley's solidified Brilliantine, which is used with abandon in such quantities that only the harshest soaps will remove it from the hair.

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Genital cleanliness is extremely important for Marquesans. By the time of puberty it is well impressed on both boys and girls alike. Very scrupulous attention is paid to cleaning beneath the foreskins (ki'i) of males. As the extensive sexual activity of the boys prior to this time has rendered the foreskin flexible, this aspect of cleanliness usually presents no problem. An expression of the attitude toward genital cleanliness is found in the insult: pi'au'ota (your stinking foreskin filth), which is an extremely serious affront when uttered in anger.

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For girls, constant bathing and the application of vaginal astringents (which terminates at this time), are emphasized.

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The male's passage of puberty is marked by circumcision (tehe) which usually occurs between the ages of 12 and 14. It is not looked upon primarily as a necessity for personal hygiene, as that is possible to maintain without surgical aid, as noted above. No instances of infection necessitating circumcision were ever recorded. Rather, it is thought of as a milestone in male developing, with a secondary hygienic

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/26 cont./

rationale. Certain deviate individuals have refused to undergo
circumcision, possibly /27/ as a concession to campaigns
carried on by some French missionaries to stamp out the prac-
tice. One entire family in Taiohae has traditionally refused
to be circumcised. Many males of this family have ultimately
yielded to intense social pressure from their male friends,
and also from their wives, being circumcised finally in their
late twenties. Much of this pressure is exerted in the form of
constant oblique joking about circumcision and people who
are unclean. In the case of the wives, however, more direct
pressure can be exerted. Their requests are usually in the
form: "Why aren't you like other men?"

Circumcision in the Marquesas involves a very loose
approximation to the true meaning of the term, for the opera-
tion involves a longitudinal incision through the foreskin on
the dorsal aspect of the glans penis (po'ama).

A group of boys are gathered together and circumcised
at one time by an individual who specializes in this operation.
It is often attempted to have a relative of the parents genera-
tion perform the operation. No attempt is made to anesthetize
the locale of the incision. The foreskin is stretched tightly
over a slip of bamboo which has been inserted between it and
the glans, while the incision is made with a razor blade or
knife. Recently, scissors have come into vogue in Taiohae, as
it is said that they make a much cleaner incision. In the
aboriginal past, incisions were made with bamboo knives.

/28/ After circumcision, a medicinal preparation is
applied to speed healing of the incision and prevent infection.
This consists of the astringent juice of the candle-nut tree bark
('ama = *A. trilobita*) and the leaves of the kaka'a hue
(*Diellia Brownii*). (Two other plants are also used but we
could not identify them.) This is applied daily after bathing,
at which time the area around the wound is carefully cleaned;
then the penis is placed with the dorsal side against a sun-
heated stream boulder until it is dried. The heat from the
stream boulder is believed to have a beneficial effect on the
healing process.

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The sequence of vaginal astringents is terminated at puberty, but a new type of medication is begun in some cases, to alter the color of the mucus membranes and the labiae. It is believed to be shameful for the labiae or mucus lining of the vulva to be excessively ruddy in color, hence a preparation of chopped young coconut meat is applied over the vulva to alter the color of the parts in question. A supposed secondary effect of this medication is to render the pubic hair (hu'u hu'u) more pliable and soft, as coarse pubic hair is considered to be somewhat unbecoming. [826 832 757 856] [824]●

/33/ Girls at puberty continue to receive sexual instructions from their grandmothers or members of the grandmother's generation, but much is also learned from more sexually advanced friends. At this age, Marquesan girls are often seen together, talking secretly for long periods of time. The talks almost invariably involve sexual matters. For this reason, government school teachers state that it is wiser to release girls from school at this point, as their interests often attract and produce "adverse" effects on younger girls in the lower grades of school. [864 602 603 883 521 875 871]

At puberty, female homosexuality occurs. One context in which some homosexual play takes place is during instruction of relatively sexually inexperienced girls by others who are more experienced. In such instruction, both girls remove their clothing and assume a position of copulation. The instructor supposedly demonstrates the positions of intercourse and the pelvic movements, acting first as the "girl" and then the "boy" of the couple. [864 838]

Although very much at ease with each other in states of undress, girls at puberty become very self-conscious about appearing in mixed company in any type of attire that might be termed daring. In intercourse they seldom remove all of their clothing, usually merely pulling up their skirt, even if there is no probability of being surprised en flagrante. Swimming is indulged in fully dressed, if there is any possibility of being observed, while bathing nude in secluded pools is quite common and semi-nudity around the house is the rule. [291 883 833 526 515]

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There are relatively few mahu in the archipelago. I saw one transvestite, who lived with a woman and reputedly had fathered her children but was nevertheless definitely termed a mahu by the natives, having indulged in habitual homosexuality. This person had a very feminine physique with wide hips, narrow shoulders, and thin poorly muscled arms and legs, contrasting sharply to the usually heavily muscled Marquesan male. He walked with a feminine hip swing, used hand and arm motions like those of women, and wore a wrap-around skirt, a woman's blouse tied in a bare midriff fashion, and a string of shells. This person enjoyed a considerable reputation as a "laundress" and "seamstress," two characteristically female roles.

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Two other homosexuals, not transvestites but very markedly effeminate, were also married, using their wives to attract males and /55/ compromise them for homosexual acts. Both men maintained fairly regular male lovers. Other males who showed interest in the wives were propositioned and promised use of the wife if they would indulge in pederasty or fellation first with the husband. The women involved in these relationships did not appear to be overly concerned about the husband's deviation. Both of these individuals practiced fellatio with frequency as well as pederasty. At least one experienced a very strong orgasm during pederasty. Natives who had consorted with him remarked that he was "just like a woman: making noise in his orgasm." Fellatio was resorted to for the purpose of exciting a lagging male before pederasty, as well as to produce an orgasm.

[832]

Female homosexuality occurs, but no data on frequency is available. One case of bestiality was noted in which a sexually deprived young girl in an isolated valley had used a dog to perform cunnilingus with some regularity, in the absence of males.

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Digital and mechanical masturbation is practiced by adolescent females also, probably more frequently in cases of sexual deprivation. Bananas and pandanus fruit segments

[824]

/55 cont./

are often used for this purpose, as a result of which one often [824]●
hears males jokingly refer to "the tired banana" (meika pa'u pa'u)
before girls who might have been indulging in the activity. [522]

Incest is by no means unheard of in the Marquesas: in 835
fact, many Tahitians cite incest as one of the distinguishing
characteristics of /56/ Marquesan sexual behavior which,
however, is a wild exaggeration.

Now, the incest tapu are no longer clear. Furthermore,
it is uncertain what the former practices were. On the
parental generation, the tapu extends to both parents' rela-
tives of the opposite sex of ego, regardless of age. In cases
where mother's sister is almost equal in age to ego, the
tapu still holds. Even in cases where a male's mother's sister
is extremely promiscuous, sexual relationships are forbidden.

On ego's generation, tapu apply to all siblings of op-
posite sex and to classificatory siblings of the opposite sex
(cousins). How far out these tapu extended could not be de-
termined. In marriage there is a kind of semisanctioned re-
lationship between in-laws of the opposite sex. Intercourse
between a man and his wife's sisters, or a woman and her
husband's brothers, is quite common. One informant described
how he repeatedly induced his wife to stay overnight at her
parents' home so that he would have access to her younger
sister, who he preferred.

In case of death, there is a preference shown toward the 587
levirate. The son of an informant was killed while pearl-
diving in the Tuamotu archipelago in August 1956, leaving
a wife and three children. The informant immediately dis-
patched a younger son to the widow, who was residing in
Tahiti, with the hope that the son could replace his brother
in the family. He said that it would be "nice" because the
two boys were /57/ of the same family, hence the chil-
dren would not have to grow up with an alien father who
might not love them as much.

Actual cases of incest within the nuclear family are 835
few, but receive much publicity. During the author's stay

/77/

in adolescence (which left her sterile); the other case, however, may equally as well have been hereditary. Most Marquesans above the twenties have contracted venereal diseases at least once in their lives, while a number of adolescents, mostly male, have contracted it also. It is not looked upon as a prestigious experience; most Marquesans being rather reticent about their own record. This is completely understandable in view of the great emphasis which the culture places on genital hygiene. [181]

In collecting female life histories, my wife found that sterility among older women was often associated with a history of severe venereal infections in youth. Up until the post-World War II period, there was no more than a token attempt made by the French government to control venereal diseases which were evidently extremely high. The advent of antibiotics has made treatment easy and relatively rapid. One must add that the use of the hypodermic and syringe is most impressive, constituting something of a positive attraction to draw infected patients to the infirmary, although the severe lectures given out by the medical personnel mitigate somewhat the attraction of the equipment used in treatment. [24] 744 [195]

Native remedies for venereal diseases are in wide use, especially in areas that are remote from the administration doctor or trained nurses, stationed on various islands throughout the archipelago. The remedies are applied often by native medical practitioners, although many "non-professional" individuals know the mode of preparation. 757

/78/ haika mimihati
ki'i'ama

"medicine for broken urine"
skin of the candlenut (Aleurites
triloba F)

ki'i kehika

skin of the pomme rouge (Anona
squamosa)

'aka hau

roots of hibiscus (H. tiliaceus)

'aka outi

root of Cordyline terminalis

noni vehine

fruits of morinda citrifolia L.

noni vahana

(round and square stemmed respectively)

757
824 ●

/93 cont. /

observances (Handy, *ibid*) reported in the ethnographic sources⁸⁸¹ are no longer observed, not even in part. Elder informants,¹⁸² speaking of the past, stated that boys were often assigned to women who would supervise the healing of the incision and indulge in a ritual intercourse upon the removal of the scabs. There is no ethnographic or historic data to substantiate or contradict these statements; however, due to the fact that they were obtained from a usually reliable informant, I deem^[115] them to be acceptable, at least tentatively.

Likewise, no comparative data exists for the practice of³⁰⁴ preserving the bamboo slivers used for stretching the foreskin⁸²⁴ in the circumcision operation as a charm against impotence,^[789] although Handy reports that the slivers were preserved without stating a reason for the preservation. It was only possible to obtain information on this practice in one valley; therefore,^[114] the behavior may actually be a local development. It is^[184] doubtful if very profound regional differences in such matters can exist in an island population of about 980 people in which a reasonable amount of traffic between valleys takes place.

There is little evidence concerning the age at which⁸⁶⁴ male children began to have heterosexual experiences in the¹⁷⁴ aboriginal period. Linton (p. 168) states that both sexes began heterosexual intercourse before /94/ puberty. As will^[114] be noted later, this was apparently true for the females, but it may not have been so for males. The stigma attached to lack of circumcision is strong today, and as Handy indicate^[626] (p. 95), it was quite strong in the past if not stronger. It is^[304] therefore doubtful if boys would be able to enter into heterosexual intercourse before circumcision. It appears, then, that circumcision may have been the gateway to^[881] heterosexual relations in the past as it is now, and the dis-^[182]parate ages at which the sexes begin such activity may not be a result of culture contact, but a reflection of the situation.

The vaginal cosmetics used by adolescent girls again⁷⁵⁷ bear witness to the heavy emphasis placed on genital^[826] qualities in evaluating the sexual potential of a woman.^[832] The use of cosmetics can be considered as part of the com-^[856]plex of practices beginning in early infancy, designed to

/94 cont. /

ultimately produce a sexually pleasing adolescent girl. The use of cosmetics also appears to be a surviving remnant of an aboriginal girl's ceremony of which relatively little is known today. This lacuna in Marquesan ethnography is largely due to missionary efforts which were concentrated on stamping out all of the more outstanding and orgiastic ceremonies in the Marquesan native culture. Some information was obtained on ceremonies which were related in some way to puberty from informants on Nuku Hiva, in Hatiheu and Taipivai, two valleys which were formerly united in the historic period, at least, as a single tribe -- the Taipi.

/95/ According to informants, adolescent girls were kept at home and subjected to special treatment with the vaginal cosmetics described above, as well as a preparation for lightening skin color, made from the vine papa. Some tattooing may have been performed on girls of higher rank at this time. When the appropriate time arrived, the girls would be taken to the subtribal ceremonial center (tohua or koika) where they participated in ceremonies in which they exhibited themselves, their tattoo if any and submitted to a genital inspection. For the genital inspection they stood upon flat-topped boulders that were ranged along the sides of the rectangular ceremonial plazas. These boulders were called ke'a vehine po'otu or ke'a vehine haka (beautiful girl stone or dancing girl stone, respectively). These boulders are to be found on nearly every ceremonial plaza on Nuku Hiva. Although it is certain that they served other purposes beside genital inspection alone, this purpose seems to have loomed sufficiently large, hence the name attached.

In the genital inspection, if the labiae and mucus membrane lining of the vulva were pale and the pubic hair pliant and short, the girl was acceptable by Marquesan aesthetic standards. If, however, the labiae and membranes were of a ruddy color, then the girl was subjected to considerable derision, being insulted with the appellation of to'e, pa'a, ke hika -- "clitoris (like a)-ripe anona squamosa."